



1616 P Street, NW
Suite 300
Washington, DC 20036
T +202.683.2500
F +202.683.2501
foodandwaterwatch.org

December 9, 2019

Mr. Dan Opalski
Director of the Water Division
EPA Region 10
1200 Sixth Avenue, Suite 155
Seattle, WA 98101-3188

Submitted via email to: peak.nicholas@epa.gov

Re: Draft NPDES Permit Number IDG010000: Authorization to Discharge under the National Pollutant Discharge Elimination System for Concentrated Animal Feeding Operations

Dear Mr. Opalski,

Thank you for the opportunity to provide comments on the Environmental Protection Agency's ("EPA") Draft Permit Number IDG010000, the NPDES General Permit for Concentrated Animal Feeding Operations (CAFOs) in Idaho ("Draft Permit"). Congress passed the Clean Water Act ("CWA" or "the Act") with the goal of eliminating the discharge of pollutants into waterways of the United States to improve and protect water quality.¹ The cornerstone of achieving this goal is the National Pollutant Discharge Elimination System ("NPDES") permitting program. Unfortunately, a failure to issue NPDES permits has left the CWA's goal unmet in Idaho with respect to CAFOs. Moreover, even if Idaho CAFOs were permitted, the Draft Permit would not adequately protect Idaho waterways. CAFOs are degrading Idaho's surface waters and environment with the enormous amounts of animal waste and other pollutants they generate, and EPA must implement long overdue measures in the final general permit ("Final Permit") to bring this industry's pollution under control and meet its mandate under the CWA.

Food & Water Watch ("FWW") respectfully submits these comments on behalf of itself and Snake River Waterkeeper ("Commenters") to aid EPA in its task of ensuring CAFOs in Idaho comply with the CWA and do not further degrade jurisdictional waters in the State. FWW is a national, nonprofit membership organization that mobilizes regular people to build political power to move bold and uncompromised solutions to the most pressing food, water, and climate problems of our time. FWW uses grassroots organizing, media outreach, public education, research, policy analysis, and litigation to protect people's health, communities, and democracy

¹ 33 U.S.C. § 1251(a).

from the growing destructive power of the most powerful economic interests. FWW has approximately 4,800 members and supporters across Idaho.

Snake River Waterkeeper is a 501(c)(3) non-profit corporation registered in Idaho with the mission of “applying science and law to protect, restore, and sustain waters of the Snake River Basin.” As part of its water quality program operation, Snake River Waterkeeper monitors water quality at more than 50 sites across the Basin, investigates citizen reports and pollution concerns, and enforces environmental laws - with the goal of realizing the Clean Water Act's mandate of “swimmable, fishable, and drinkable water” across the 100,000 square mile Basin's full reach. CAFO permit advocacy is part of Snake River Waterkeeper's effort to improve water quality in the Snake River, curb pollution and water resource degradation, increase native fish habitat and natural coldwater species reproduction, and restore native fish populations throughout the Snake River Basin.

Commenters support EPA's efforts to protect Idaho's waterways through certain improvements proposed in the Draft Permit, and particularly the proposed prohibition on applying CAFO waste to snow-covered, frozen, or saturated ground.² This common-sense protection will help slow the ongoing contamination of jurisdictional waters in the State. This is an important prohibition since applying manure under these conditions all but ensures runoff into surface waters. Ground that is frozen is unable to absorb the manure, and manure applied in these conditions will mix with runoff water as the top layer of soil begins to melt while the lower layers of soil remain frozen. Similarly, manure applied on top of snow simply runs off with the snow as it melts, either ponding or running off into nearby waterways. Further, there are no crops planted and growing in these conditions to utilize whatever nutrients might be in the waste. There is strong scientific support for this prohibition, and EPA has included similar restrictions in other CAFO permits and strongly encourages other states to do the same.³ CAFOs should not be allowed to dispose of their waste on fields under these conditions at any time.

² Draft Permit at II.B.10.

³ E.g., EPA, 821-B-04-009, Managing Manure Nutrients at Concentrated Animal Feeding Operations (Dec. 2004) at 4-14 (“Surface runoff losses are more likely on soils...that are snow-covered or frozen (via runoff once the snow melts or soil thaws)...”), 4-16 (“Research indicates that winter applications increase pollutants in runoff during spring thaw and rainfall events.”); M.J. Komiskey et al., *Nutrients and Sediment in Frozen-Ground Runoff from No-Till Fields Receiving Liquid-Dairy and Solid-Beef Manures*, 66(5) J. SOIL & WATER CONSERVATION 303, 311 (Sept./Oct. 2011), <http://www.jswnonline.org/content/66/5/303.full.pdf+html> (last visited Dec. 9, 2019) (“The results of this study indicate that both [liquid dairy manure] and [solid beef manure] applied to frozen and snow-covered fields less than one week preceding runoff can significantly contribute to nitrogen and phosphorus losses in runoff.”); J. Laporte, *Winter Application of Manure and Other Agricultural Source Materials*, ONTARIO MINISTRY OF AGRICULTURE, FOOD AND RURAL AFFAIRS (Sept. 2010, last reviewed Jan. 2019), <http://www.omafra.gov.on.ca/english/engineer/facts/10-073.htm> (last visited Dec. 9, 2019) (“The risk of runoff to surface water increases when applying on frozen or snow-covered ground. If a thick layer of snow on the soil's surface melts quickly, rapid surface water runoff will flush nutrients to adjacent surface water resources.”); Karly Zande, *Raising a Stink: Why Michigan CAFO Regulations Fail to Protect the State's Air and Great Lakes and Are in Need of Revision*, 16 BUFF. ENV'T'L. L.J. 1, 51 (2008-2009) (“Manure that is spread on snow-covered or frozen ground is not effective as a fertilizer because it cannot be absorbed, and it easily washes away into the waterways when the snow melts or the ground unfreezes.”); EPA, Region 6, NPDES General Permit for Discharges from CAFOs in New Mexico (NMG01000) at II.A.5.b.ii, Appx. D; EPA, 833-F-12-001, NPDES Permit Writers' Manual for Concentrated Animal Feeding Operations at 6-15 (Feb. 2012) (hereinafter NPDES Writers' Manual for CAFOs)

Commenters request several further changes to strengthen the Final Permit in much needed ways. The Permit should:

- Establish a presumption that certain CAFOs discharge to waters of the U.S.;
- Establish additional thresholds requiring individual permit coverage;
- Include long-overdue monitoring requirements that would enable EPA, Idaho officials, and the public to meaningfully oversee CAFOs' compliance with permit terms and conditions;
- Establish effluent limitations for CAFO pollutants with no established Effluent Limitations Guidelines;
- Strengthen soil and CAFO waste sampling requirements;
- Strengthen CAFO waste storage requirements;
- Include additional requirements related to transfers of CAFO waste to third parties;
- Prohibit land application of digested waste from anaerobic digesters;
- Prohibit land application of CAFO waste by spray irrigation systems;
- Prohibit land application of CAFO waste during rainfall or when significant rainfall events are forecasted;
- Regulate discharges from CAFO ventilation systems; and
- Reassess EPA's 25-year, 24-hour storm event standard in light of climate change.

I. EPA's Regulation of CAFOs under the CWA

The goal of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."⁴ The CWA instructs EPA and states to eliminate water pollution through permits that incorporate both technology-based effluent limitations ("TBELs") and, where necessary, water quality-based effluent limitations ("WQBELs").⁵ The Act was designed to ratchet up water quality protections as pollution control technology improves, improving water quality over time through more stringent controls and maintaining high quality water through antidegradation principles.⁶

("In general, EPA strongly encourages states to prohibit application to frozen, snow-covered, or saturated ground....").

⁴ 33 U.S.C. § 1251(a).

⁵ *Id.* § 1311(b)(1)(A) & (C).

⁶ *Id.* § 1311(b)(2)(A) (requiring application of the "best available technology economically achievable" for many pollutants which will improve over time as new and better control technologies become available); 40 C.F.R. § 131.12 (antidegradation policy); *NRDC v. EPA*, 804 F.3d 149, 156 (2d Cir. 2015) ("Congress designed [TBELs] to

The CWA expressly defines CAFOs as “point sources.”⁷ Congress’ decision to include CAFOs in the definition of point source demonstrates an unambiguous intent to control and continuously reduce discharges of pollutants from the CAFO industry through the NPDES program and progressively more demanding TBELs.⁸ Yet EPA’s regulatory scheme for the industry has allowed most CAFOs nationally – and all CAFOs in Idaho – to evade regulation.

EPA has adopted an overly broad application of the agricultural stormwater exemption found in the Act’s definition of “point source.”⁹ Under this interpretation, EPA considers many discharges of CAFO pollutants from agricultural fields caused by precipitation outside the NPDES permitting regime. The exception has swallowed the rule that CAFO pollution is point source pollution. The result is that the vast majority of water pollution caused by CAFOs is essentially ignored so long as they comply with minimal land application parameters like “agronomic rate”¹⁰ requirements designed not to protect water quality but to maximize crop production. This virtually guarantees there will be unregulated runoff of CAFO pollution to waterways—the very concern that prompted Congress to regulate CAFOs as point sources in the first place.¹¹ EPA also assumes that CAFO production areas are essentially non-discharging.¹²

Moreover, even where CAFOs are permitted, EPA has not required CAFO permits to contain water quality monitoring requirements as it has done with almost every other industrial category regulated under the CWA. As a result, there is a dearth of data on the actual pollution impacts from CAFOs’ routine operations, and even facilities that previously operated under NPDES permits now assert that they do not discharge and are not required to apply for permits. Combined, this framework results in CAFOs being treated as “zero discharge” facilities—a legal fiction even in EPA’s estimation.¹³ Because of this and EPA’s failure to promulgate regulations

be technology-forcing, meaning it should force agencies and permit applicants to adopt technologies that achieve the greatest reductions in pollution.”).

⁷ 33 U.S.C. § 1362(14).

⁸ See *NRDC v. EPA*, 822 F.2d 104, 123-24 (D.C. Cir. 1987) (citing legislative history of the Act) (“the most salient characteristic of this statutory scheme, articulated time and again by its architects and embedded in the statutory language, is that it is technology forcing” and “progressively more demanding”).

⁹ 33 U.S.C. § 1362(14).

¹⁰ “Agronomic rate” means the amount of nutrients that can be applied to land that is needed and usable by crops or vegetation grown on that land which will minimize runoff and the likelihood that such nutrients will pass below the root zone to groundwater. See 40 C.F.R. § 503.11(b) (defining “agronomic rate” for sludge application purposes).

¹¹ See S. Rep. No 92-414, 92-93 (1971), *reprinted in* 1972 U.S.C.A.N. 3668, 3670 (“Animal and poultry waste, until recent years, has not been considered a major pollutant.... The picture has changed dramatically, however, as development of intensive livestock and poultry production on feedlots and in modern buildings has created massive concentrations of manure in small areas. The recycling capacity of the soil and plant cover has been surpassed.... Precipitation runoff from these areas picks up high concentrations of pollutants which reduce oxygen levels in receiving streams and lakes....”).

¹² EPA’s ELGs for dairy, cattle, swine, poultry, and veal CAFO production areas prohibit any discharge into waters of the U.S. except when “precipitation causes an overflow of manure, litter, or process wastewater” under limited circumstances. 40 C.F.R. §§ 412.31(a), 412.43(a). The large swine, poultry, and veal CAFO ELGs are almost entirely the same as those for dairy and cattle cows, except that NSPS for new point sources in this category does not contain an exception for 25-year, 24-hour storm events. *Id.* § 412.40-47.

¹³ EPA, Office of Water, National Pollutant Discharge Elimination System (NPDES) Information Collection Rulemaking and CAFOs (Sept. 2010) (hereinafter EPA CAFO Information Collection) (estimating that “75 percent of all CAFOs could experience discharges based on standard operational profiles”).

requiring CAFOs to apply for NPDES permits,¹⁴ none of Idaho's hundreds of CAFOs are currently operating under any CWA permit whatsoever.¹⁵ Slight improvements to permit requirements absent provisions that will lead to permitting in the first place are thus plainly insufficient.

II. Factual Background of CAFOs in Idaho

Idaho is home to a growing CAFO industry. Idaho is now the third largest dairy producing state with approximately 614,000 dairy cows as of January 1, 2019.¹⁶ The State also hosts other types of CAFOs, including one of the largest beef cattle CAFOs in the nation, housing over 150,000 cattle at a time.¹⁷ Many of these livestock are concentrated in approximately 365 large CAFOs.¹⁸ These CAFOs are primarily located in the Magic and Treasure Valleys of southern Idaho, through which many jurisdictional waters flow, including the Snake River. But there are also CAFOs in other regions throughout the State.¹⁹ The excessive concentration of livestock in these regions is having dire impacts on the State's water resources, including surface water quality.

Widespread impairment of Idaho's waterways is well established and is getting worse.²⁰ Idaho's most recent 303(d) list includes 1,989 miles of streams and 471 acres of lakes

¹⁴ FWW submitted a petition to EPA in 2017 explaining in extensive detail exactly how EPA could accomplish this in compliance with the *Waterkeeper Alliance* and *National Pork Producers Council* cases, and why it is important to do so. FWW's petition is included here as Appendix A.

¹⁵ EPA, NPDES CAFO Permitting Status Report: National Summary, Endyear 2018, completed 12/31/18, https://www.epa.gov/sites/production/files/2019-09/documents/cafo_tracksum_endyear_2018.pdf (last visited Dec. 9, 2019).

¹⁶ See data available at <https://quickstats.nass.usda.gov/> (last visited Dec. 5, 2019), data included here at Appendix B.

¹⁷ See Simplot Livestock Company, http://www.simplot.com/pdf/Simplot_Feedlot_Web_PDF.pdf (last visited Dec. 9, 2019); Michelle Miller, *Take a Look Inside One of the Nation's Largest Cattle Feedlots*, AGDAILY (July 2, 2019), <https://www.agdaily.com/livestock/take-a-look-inside-one-of-the-nations-largest-cattle-feedlots/> (last visited Dec. 9, 2019) ("where they have more than 150,000 head of beef cattle").

¹⁸ EPA, NPDES CAFO Permitting Status Report: National Summary, Endyear 2018, completed 12/31/18, https://www.epa.gov/sites/production/files/2019-09/documents/cafo_tracksum_endyear_2018.pdf (last visited Dec. 9, 2019).

¹⁹ See Idaho Concerned Area Residents for the Environment, *Interactive Map*, http://www.imrivers.org/idahocares/?page_id=30 (last visited Dec. 9, 2019) (mapping CAFOs in Idaho); Google Maps, *Idaho Dairies and Feedlots*, https://www.google.com/maps/d/viewer?mid=198eQBHIB_H_ZP8y7HskjF50BOKM&ie=UTF8&oe=UTF8&msa=0&ll=45.496314579699344%2C-114.074457&z=7 (last visited Dec. 9, 2019) (mapping and listing known dairies and medium and large beef CAFOs in Idaho).

²⁰ Idaho Dept. of Environmental Quality, 2016 Integrated Report Map, <https://www.deq.idaho.gov/media/60182121/ir-map-2016.pdf> (last visited Dec. 9, 2019) (showing concentrations of 303(d) listed waterways and 305(b) "not supporting" waterways in the southern Idaho regions most heavily populated by CAFOs); Snake River Waterkeeper, *Water Quality*, <https://www.snakeriverwaterkeeper.org/water-quality/> (last visited Dec. 9, 2019) (noting that "algae blooms occur throughout the calm stretches of the [Snake River in Idaho], depleting its oxygen supply"); Idaho Conservation League, *Declining Groundwater Quality in the Eastern Snake Plain Aquifer at 3* (July 2019) (hereinafter ICL GW Report), https://www.idahoconservation.org/wp-content/uploads/2019/07/ICL_GroundWaterReport-07082019-FINAL-Web-1.pdf (last visited Dec. 9, 2019) (finding nitrate contamination is "widespread and growing[.]...phosphorus data indicates that this type of contamination is also growing and has the potential to exacerbate existing problems in the Snake River[, and] data and modeling

contaminated with *E. coli*, 239 miles of streams and 55,509 acres of lakes burdened with excessive nutrients that can lead to conditions fatal for fish and other aquatic species, and 920 miles of streams with unsafe levels of fecal coliform that threaten human health and wildlife. 34,404 miles of rivers and streams and 258,383 acres of lakes are currently not supporting the beneficial uses these waterways would safely support absent pollution.²¹ Several Idaho waterways in areas dominated by CAFOs show *E. coli* levels far in excess of the Water Quality Criterion of 126 cfu/100mL geometric mean.²² Many Idaho waterways passing through CAFO dominated areas also suffer from fecal coliform contamination, nutrient overloads, and oxygen deficiency²³—likely caused or exacerbated by the discharge of waste from CAFOs.

These impairments to jurisdictional waters are increasing. For example, Idaho waters no longer meeting one or more beneficial use due to *E. coli* contamination have been on the rise since at least 2012.²⁴ Harmful algal blooms caused at least in part from nutrient loads are also an increasing water quality concern for Idaho.²⁵ CAFO-generated waste is suspected (and likely) to be a primary culprit behind these increasing impairments,²⁶ but without permitting and meaningful monitoring there is no way for the public or regulators to know the full extent of the harm.

Yet despite these increasing water quality impairments, EPA’s failure to require CAFOs to seek permit coverage – no matter how massive their operation and no matter how extensive their disposal of CAFO waste to Idaho’s lands and waters – has resulted in CAFOs operating without any form of NPDES permit. In 2011, over 100 CAFOs in Idaho were operating under an

studies strongly indicate that nitrate and phosphorus concentrations will continue to increase in the coming decades”).

²¹ Idaho Dept. of Environmental Quality, 2016 Integrated Report Map, <https://www.deq.idaho.gov/media/60182121/ir-map-2016.pdf> (last visited Dec. 9, 2019).

²² *E.g.*, Idaho DEQ, 2016 Integrated Report at Category 5 pg 36 (listing *E. coli* levels with a geometric mean of 1,108 cfu/100ml near Grand View, home to one of the world’s largest CAFOs); *id.* at 58 (*E. coli* levels of 811 cfu/100ml in Yahoo Creek, adjacent to CAFO and land application areas); *id.* at 59 (*E. coli* contamination in Pioneer Reservoir, immediately downstream of CAFO and land application areas). Because many Idaho waterways are being impaired by *E. coli* bacteria, TBELs may be inadequate to prevent CAFOs from causing or contributing to water quality standard (“WQS”) violations; in such cases, more stringent WQBELs are required.

²³ Idaho DEQ, 2016 Integrated Report at Category 4a pgs 89-113 (TMDLs for Southwest Basin), pgs 113-171 (TMDLs for Upper Snake River Basin). Specific examples include, but are not limited to, C. J. Strike Reservoir with dissolved oxygen and phosphorus (*id.* at Category 4a pgs 89-90); Bruneau River subbasin with *E. coli*, phosphorus, and dissolved oxygen (*id.* at 90-91); Upper Snake-Rock subbasin with phosphorus and fecal coliform (*id.* at 144-49, 152); Salmon Falls Creek subbasin with nitrogen, phosphorus, and *E. coli* (*id.* at 149-51).

²⁴ Idaho DEQ, 2016 Integrated Report at xvii (showing an increase in *E. coli* contaminated waters added to the State’s 303(d) list since 2014); Idaho DEQ, 2014 Integrated Report at xv (showing the same from 2012 to 2014).

²⁵ Idaho DEQ, 2016 Integrated Report at 17; Idaho DEQ, 2014 Integrated Report at 17. *See also* Idaho DEQ, 2016 Integrated Report at Appx. Q pg. 3 (public comment requesting further investigation into the role dairies and other sources play in this increasing water quality problem, with no meaningful response from Idaho DEQ).

²⁶ *See, e.g.*, ICL GW Report, *supra* note 20, at 7-8; Twilight Greenaway, *Forget Potatoes: Idaho Now Grows CAFOs*, GRIST (Aug. 26, 2011), <https://grist.org/factory-farms/2011-08-25-forget-potatoes-idaho-now-grows-cafos/> (last visited Dec. 9, 2019).

NPDES permit.²⁷ Today that number is zero.²⁸ Thus, Idaho's decline in water quality correlates with the complete deregulation of its CAFOs.

CAFOs introduce enormous quantities of waste containing all of these pollutants into Idaho's environment through industry-standard waste management practices.²⁹ The primary means by which Idaho CAFOs manage and dispose of their animal manure and other waste is by storing it in manure lagoons at production sites and then applying it to nearby agricultural fields (or selling or giving the waste to third parties to apply to their lands at their discretion). Both the storage and disposal of CAFO waste results in discharges of harmful pollutants to waters of the United States, either directly or via groundwater with direct hydrological connection to jurisdictional waters—in fact, the Snake River is a quintessential example of a river fed by groundwater.³⁰ Manure lagoons are actually designed to leak.³¹ And applying CAFO waste to agricultural fields has the potential to discharge pollutants to waterways in several ways: through over-application, runoff in dry weather conditions, tile drainage systems that underlie target fields and channel liquid waste into nearby waters, and drift and runoff from spray irrigation systems used to apply liquid waste, among other pollutant pathways.³²

²⁷ EPA, NPDES CAFO Rule Implementation Status – National Summary, Endyear 2011, completed 12/31/11, https://www.epa.gov/sites/production/files/2015-08/documents/npdes_cafo_rule_implementation_status_-_national_summary_endyear_2011_0.pdf (last visited Dec. 9, 2019).

²⁸ EPA, NPDES CAFO Permitting Status Report: National Summary, Endyear 2018, completed 12/31/18, https://www.epa.gov/sites/production/files/2019-09/documents/cafo_tracksum_endyear_2018.pdf (last visited Dec. 9, 2019).

²⁹ See, e.g., EPA CAFO Information Collection, *supra* note 13; FWW, *The Urgent Case for a Ban on Factory Farms*, <https://www.foodandwaterwatch.org/insight/urgent-case-ban-factory-farms> (last visited Dec. 9, 2019) (with downloadable report); A Greener World, https://agreenerworld.org/challenges-and-opportunities/environmental-pollution/?gclid=EAJaIQobChMIjofJ-t2f5gIVhSCtBh0BOAAACEAAYASAAEgIXh_D_BwE (last visited Dec. 9, 2019).

³⁰ The Snake River Plain, where most of Idaho's CAFOs are located, overlies highly fractured basalt geology that enables pollutants deposited on the surface to easily reach groundwater, which discharges directly into the Snake River either directly or via tributaries. ICL GW Report, *supra* note 20 at 5-6, 9; Digital Atlas of Idaho, *Eastern Snake River Plain – Hydrogeology* (Dec. 1998), <https://digitalatlas.cose.isu.edu/hydr/main/srbfr.htm> (last visited Dec. 9, 2019); Digital Atlas of Idaho, *What Is Meant by Surface and Ground Water Interaction?*, <https://digitalatlas.cose.isu.edu/hydr/main/srbfr.htm> (last visited Dec. 9, 2019) (“The Snake River provides an excellent example of a river fed by ground water.”).

³¹ See, e.g., *Cnty. Ass'n for Restoration of the Env't. v. Cow Palace, LLC*, 80 F. Supp. 3d 1180, 1223 (E.D. Wash. 2015) (“even assuming the lagoons were constructed pursuant to NRCS standards, these standards specifically allow for permeability and, thus, the lagoons are *designed to leak*” (emphasis added)); EPA, 600/R-04/042, *Risk Assessment Evaluation for Concentrated Animal Feeding Operations* 24 (May 2004) (noting water contamination can be caused by manure lagoons that are known to leak for a variety of reasons); NRCS, *Agricultural Waste Management Field Handbook*, Chapter 10 at 10D-4 (Aug. 2009), <https://www.wcc.nrcs.usda.gov/ftpref/wntsc/AWM/handbook/ch10.pdf> (last visited Dec. 9, 2019) (recognizing that even more protective synthetic liners can only “reduce seepage,” not eliminate it).

³² See, e.g., EPA, 833-R-10-006, *Implementation Guidance on CAFO Regulations—CAFOs That Discharge or Are Proposing to Discharge* (May 28, 2010) (hereinafter 2010 Guidance); LPECL Admin, *Preferential Flow of Manure in Tile Drainage*, LIVESTOCK AND POULTRY ENV'T'L. LEARNING COMMUNITY (Mar. 5, 2019), <https://lpecl.org/preferential-flow-of-manure-in-tile-drainage/> (last visited Dec. 9, 2019); Michelle B. Nowlin, *Sustainable Production of Swine: Putting Lipstick on a Pig?*, 37 VT. L. REV. 1079, 1086-88 (2013), https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=5812&context=faculty_scholarship (last visited Dec. 9, 2019); Nate Seltenrich, *Manure Irrigation: Environmental Benefits, Potential Human Health Risks*, 125(12) ENV'T'L

Leaching from storage facilities, excessive land application of CAFO waste, and other discharges from production and land application areas is almost certainly causing and contributing to widespread water quality impairments in Idaho.³³ The State's waterways are under siege from excessive numbers of animals housed on CAFOs and the necessity of disposing of their waste one way or another, year after year. As explained above, hundreds of state-collected water quality samples have discovered impairments from nutrient overloads, fecal coliform, dissolved oxygen, and *E. coli* many times the 126 cfu/100ml water quality criterion.³⁴ Nutrient pollution is widespread and dozens of streams, as well as large portions of the Snake River, have been under phosphorus total maximum daily loads ("TMDLs") for years now.³⁵ These water quality problems threaten the environment, wildlife, and human health throughout Idaho.

III. EPA Must Strengthen the Draft Permit to Protect Idaho's Waterways and Ensure Compliance with the CWA and Permit Conditions

When Congress specifically included CAFOs in the CWA's definition of "point source," it demonstrated an unambiguous intent to control and continuously reduce discharges of pollution from the CAFO industry through the NPDES permitting program.³⁶ EPA's approach to date has failed, and though the Draft Permit is an improvement to the status quo, it does not comply with the CWA and will not adequately reduce CAFO pollution of Idaho's waterways. CAFOs are and will continue to operate without the necessary oversight required by the CWA absent strong EPA action to ensure that discharging CAFOs must obtain NPDES permits in the first instance, in addition to more protective permit conditions.³⁷ Unfortunately, EPA's

HEALTH PERSPECTIVE (Dec. 12, 2017), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5963588/> (last visited Dec. 9, 2019).

³³ See, e.g., ICL GW Report, *supra* note 20, at 7-9, 13; JoAnn Burkholder et al., *Impacts of Waste from Concentrated Animal Feeding Operations on Water Quality*, 115(2) ENV'T'L. HEALTH PERSPECTIVE 308, *passim* (2008), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1817674/> (last visited Dec. 9, 2019); Carrie Hribar, *Understanding Concentrated Animal Feeding Operations and Their Impact on Communities*, NAT'L ASSN. OF LOCAL BOARDS OF HEALTH (2010), https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf (last visited Dec. 9, 2019) ("It has been found that states with high concentrations of CAFOs experience on average 20 to 30 serious water quality problems per year as a result of manure management problems."); University of Idaho, *I-Safety*, <https://www.uidaho.edu/dfa/administrative-operations/i-safety> (last visited Dec. 9, 2019) (documenting a June 2018 "major oil spill at [a] dairy farm").

³⁴ See *supra* notes 21-24; Idaho DEQ, 2016 Integrated Report at xviii, 40 (listing *E. coli* contamination as a leading cause of impairment in lakes, rivers, and streams; *id.* list of Category 4a waters (impaired waters with EPA approved TMDLs), list of Category 5 waters (impaired waters needing a TMDL).

³⁵ *Id.* at Category 4a pgs 89-171 (listing TMDLs for the regions most populated with CAFOs); Idaho DEQ, *Snake River (Upper Snake-Rock) Subbasin*, <https://www.deq.idaho.gov/water-quality/surface-water/tmdls/table-of-sbas-tmdls/snake-river-upper-snake-rock-subbasin/> (last visited Dec. 9, 2019) (providing details of the extensive phosphorus and pathogen contamination of a portion of the Upper Snake River that runs through the Magic Valley where CAFOs are prevalent, and where TMDLs have been in place since 1999).

³⁶ 33 U.S.C. § 1362(14).

³⁷ As discussed above, no CAFOs currently operate under any NPDES permit whatsoever in Idaho. The ongoing water impairments fairly traceable to CAFOs and their waste management practices highlights the importance of a protective general permit being in place for when these facilities are finally required to seek permit coverage as required under the CWA. These facilities are clearly engaged in widespread, unpermitted discharges of pollutants

fundamentally flawed framework for regulating CAFOs has left them profoundly underregulated, with serious and ongoing consequences to water quality across Idaho. With an expanding CAFO industry and increasingly impaired waters, Idaho needs far more protection than the Draft Permit provides. Idaho's CAFOs are not "zero discharge" facilities, and the Draft Permit does not go far enough.³⁸

EPA must strengthen the Draft Permit to meet the mandates of the CWA and to protect Idaho's jurisdictional waters and environment. In particular, Commenters submit the following 12 objections and suggestions for improving the Draft Permit.

A. EPA Should Establish a Presumption of Discharge for Certain CAFOs

To regulate all CAFO dischargers and establish an effective duty to apply standard, EPA must make the requisite factual findings to support the inclusion of provisions in its General Permit that create a presumption of discharge for certain CAFOs. Following *National Pork Producers Council*,³⁹ which eliminated the duty to apply for CAFOs that propose to discharge based on design or operation characteristics, the number of NPDES-permitted CAFOs in Idaho has dropped from over one hundred to *zero*.⁴⁰ Yet EPA has estimated that as many as 75% of CAFOs in fact discharge.⁴¹ Idaho CAFOs are no exception, and EPA cannot allow the status quo of nonregulation of jurisdictional discharges and associated water quality impairments to continue across the State.

EPA has already done much of the work to establish the needed presumptions. While some aspects are no longer applicable since *Pork Producers* and EPA's subsequent rule revision, EPA's 2010 CAFOs that Discharge or are Proposing to Discharge guidance⁴² ("2010 Guidance") provides a strong starting point to conduct objective assessments of which categories of Idaho CAFOs discharge based on the conditions and practices at the state's CAFOs that can lead to illegal and unpermitted discharges in the state. The 2010 Guidance explains that some conditions that lead to CAFO discharges – including proximity to waters of the U.S., whether the CAFO is upslope from waters of the U.S., climatic conditions, and drainage of the production area – are "beyond the operator's control,"⁴³ such that EPA can support a factual determination that all Idaho CAFOs with these conditions are dischargers with a duty to apply for the General Permit.

that need to be brought under control. See generally EPA CAFO Information Collection, *supra* note 13 (estimating that "75 percent of all CAFOs could experience discharges based on standard operational profiles").

³⁸ See, e.g., Draft Permit at 14 ("Ensuring accurate application rates *reduces probability* of off-site transport [of pollutants]." (emphasis added)); 40 C.F.R. § 412.4(c)(2) (requiring only that BMPs for land applications "minimize phosphorus and nitrogen transport from the field to surface waters").

³⁹ *Nat'l Pork Producers Council v. EPA*, 635 F.3d 738 (5th Cir. 2011).

⁴⁰ Compare EPA, NPDES CAFO Rule Implementation Status – National Summary, Endyear 2011, completed 12/31/11, https://www.epa.gov/sites/production/files/2015-08/documents/npdes_cafo_rule_implementation_status_-_national_summary_endyear_2011_0.pdf (last visited Dec. 9, 2019), with EPA, NPDES CAFO Permitting Status Report: National Summary, Endyear 2018, completed 12/31/18, https://www.epa.gov/sites/production/files/2019-09/documents/cafo_tracksum_endyear_2018.pdf (last visited Dec. 9, 2019).

⁴¹ EPA, CAFO Information Collection, *supra* note 13.

⁴² EPA, 2010 Guidance, *supra* note 32.

⁴³ *Id.* at 4.

The 2010 Guidance also addresses ventilated livestock confinement buildings as sources of production area discharges of contaminated process wastewater, as these systems can directly discharge pollutants such as manure dust, litter, ammonia, and feathers into nearby waters of the U.S. or conduits to jurisdictional waters, such as production area ditches or channels. While the Guidance limited this discussion to poultry houses, other livestock sectors, including dairies, also emit ammonia and other pollutants via the confinement buildings, whether open air, partially enclosed, or fully enclosed. As discussed below at section III.K, the majority of ventilated or otherwise emitted ammonia will deposit nearby, including in conduits to waters of the U.S. and in waters of the U.S. themselves, where it contributes to nitrogen pollution. Because these systems cause ongoing discharges at many facilities, CAFOs ventilating pollutants from their confinement houses have a duty to apply for an NPDES permit if an objective assessment indicates that this method of operation leads to a discharge of pollutants.

It appears that EPA has not conducted the requisite objective assessments for Idaho CAFOs in the past several years, because the number of permitted operations in the state has dwindled to zero under the agency's watch. Nonetheless, absent appropriate findings that certain CAFOs discharge and a corresponding duty to apply for all discharging CAFOs, the Draft Permit is unlawful. The presumptions of discharge from the production area and duty to apply should likely at a minimum apply to CAFOs located directly upslope from, land applying upslope from, or otherwise located or land applying in close proximity to a water of the U.S. or conduit to water of the U.S.; CAFOs located in a floodplain; and CAFOs discharging via water-polluting emissions and ventilation systems.

B. The Final Permit Should Require Individual NPDES Permits for Very Large CAFOs and CAFOs Located in Already Impaired Watersheds

As a threshold matter, EPA should consider two additional criteria requiring an individual NPDES permit in addition to those outlined at Section I.F of the Draft Permit. First, EPA should consider a numerical animal unit cap for coverage under this General Permit. Very large facilities should not be assumed to have the same water pollution potential as all other, smaller facilities, and EPA should not assume that the same TBELs will adequately protect water quality from large CAFOs of every scale. EPA has itself recognized that general permit conditions may be too generalized to address the unique potential for discharges at extremely large CAFOs, and the Final Permit should reflect that fact.⁴⁴

Second, given Idaho's existing significant water impairments in regions dominated by CAFOs and irrigated agriculture used to dispose of CAFO waste, CAFOs located in or land applying waste in already impaired watersheds should be required to obtain individual NPDES permits. This would allow EPA and state regulators to more effectively analyze the CAFO's likely impact on the impaired waterway and determine the WQBELs and wasteload allocations necessary to attain WQS and implement TMDLs. Assuming that compliance with a general permit—which is by nature generalized and not capable of ensuring those protections uniquely necessary for certain impaired waterways—will stop ongoing impairment, and even improve

⁴⁴ See EPA, 833-K-10-001, NPDES Permit Writers' Manual at 3-3 (Sept. 2010) (hereinafter NPDES Permit Writer's Manual) (explaining how issuing individual permits allows for catered consideration of pollution potential and WQBELs).

water quality, is incorrect and not supported by a history of water quality problems in Idaho.⁴⁵ Individual NPDES permit coverage would be far more effective at meeting the goal of the CWA and bringing CAFO pollution under control.⁴⁶

For example, significant portions of the Snake River watershed are under TMDLs for pathogens and phosphorus,⁴⁷ and recent data show levels of nitrate contamination in the hydrologically connected groundwater in the same area are likely to keep rising for 40-50 years even if nitrogen inputs are held constant.⁴⁸ This same area is heavily populated by CAFOs.

C. The Final Permit Must Require Effluent Monitoring

The CWA requires that NPDES permits contain conditions, including data collection and reporting, to “assure compliance” with the Act.⁴⁹ Furthermore, Section 308 of the Act states that “[w]henever [it is] required to carry out the objective” of the CWA, “(A) the [EPA’s] Administrator shall require the owner or operator of any point source to ... (iii) install, use, and maintain such monitoring equipment or methods ... and (v) provide such other information as he may reasonably require.”⁵⁰

EPA’s accompanying CWA regulations require all NPDES permits to include certain monitoring and reporting requirements designed to “assure compliance with permit limitations.”⁵¹ These regulations include, among other provisions, “requirements to monitor: (i) The mass (or other measurement specified in the permit) for each pollutant limited in the permit; (ii) The volume of effluent discharged from each outfall; [and] (iii) Other measurements as appropriate....”⁵² Permit monitoring provisions must further specify the “type, intervals, and frequency [of sampling] sufficient to yield data which are representative of the monitored activity, including, when appropriate, continuous monitoring.”⁵³ Permittees must report monitoring results “with a frequency dependent on the nature and effect of the discharge, but in no case less than once a year.”⁵⁴ Given these statutory and regulatory requirements, “[g]enerally, ‘an NPDES permit is unlawful if a permittee is not required to effectively monitor its permit compliance.’”⁵⁵

⁴⁵ CAFO general permits have been the practice in Idaho for many years (when CAFOs were being issued permit coverage at all), yet water quality continues to be a major problem in areas dominated by CAFOs as explained above at section II.

⁴⁶ NPDES Permit Writer’s Manual, *supra* note 44, at 3-3.

⁴⁷ See *supra* notes 21-23, 35.

⁴⁸ ICL GW Report, *supra* note 20, at 13 (finding that “USGS numerical model simulations of nitrate in the [Eastern Snake Plain Aquifer] indicate that it will take 40-50 years for concentrations to rise to the levels expected based on the amount of nitrogen that has been put on the land....”).

⁴⁹ 33 U.S.C. § 1342(a)(2); *NRDC v. EPA*, 808 F.3d 556, 580 (2d Cir. 2015) (“Under the CWA, NPDES permits must contain conditions that require both *monitoring* and *reporting of monitoring results* of TBELs and WQBELs to ensure compliance.” (emphasis in original)).

⁵⁰ 33 U.S.C. § 1318(a).

⁵¹ 40 C.F.R. § 122.44(i)(1).

⁵² *Id.*

⁵³ *Id.* § 122.48(b).

⁵⁴ *Id.* § 122.44(i)(2).

⁵⁵ *NRDC v. EPA*, 808 F.3d at 583 (quoting *NRDC v. City of L.A.*, 725 F.3d 1194, 1207 (9th Cir. 2013)).

EPA must include monitoring requirements that allow for meaningful oversight of Idaho CAFOs' compliance with the Draft Permit's conditions and effluent limitations. This requires representative water quality monitoring at CAFO production sites as well as land application sites adequate to provide oversight of permit compliance. While the Draft Permit prohibits discharges from CAFO production areas except under limited circumstances and requires CAFOs to develop and implement Nutrient Management Plans ("NMP") for the handling, storing, and land application of their waste, the Draft Permit does not include monitoring requirements that would enable EPA, Idaho officials, or the public to ensure their operations are in compliance with these no discharge parameters and effluent limitations. As explained by the Second Circuit, "NPDES permits must contain conditions that require both *monitoring* and *reporting of monitoring results* of TBELs and WQBELs to ensure compliance."⁵⁶ The Draft Permit's failure to require such monitoring plainly violates the CWA and leaves regulators and the public to guess whether and how CAFOs are violating the law.

The sampling and monitoring requirements the Draft Permit does contain are insufficient to satisfy the CWA or EPA regulations. The soil and manure sampling requirements included in the Draft Permit look at the nitrogen and phosphorus content of CAFO waste and target fields, helping calculate agronomic rates of application, but have nothing to do with whether discharges are occurring that impact jurisdictional waters.⁵⁷ Nothing about this sampling tells whether waste was actually applied appropriately and in accordance with a CAFO's NMP. And the requirement to monitor manure spills and other obvious, discrete discharges from wastewater or manure storage structures also does not suffice because it takes place after a known violation, rather than being representative and serving to assure compliance.⁵⁸

EPA must determine what monitoring is representative for a particular CAFO applicant. It will likely include monitoring surface water and/or groundwater where a direct hydrological connection exists between groundwater and jurisdictional waters, monitoring discharge points from production areas, such as ditches that may carry contaminated wastewater off-site and into waterways.⁵⁹ Representative monitoring must also include monitoring requirements for tile drain outfalls at fields where CAFO waste is land applied, where such systems are in place. Tile drain systems are conduits underlying agricultural fields designed to shed excess moisture, and where liquid manure is applied can directly discharge pollutants to surface waters or conduits to surface

⁵⁶ *NRDC v. EPA*, 808 F.3d at 580 (emphasis in original).

⁵⁷ See Draft Permit at II.B.6, III.A.2.g.

⁵⁸ See Draft Permit at IV.D.

⁵⁹ Direct hydrological connections exist between Idaho's groundwater and jurisdictional waterways in regions of Idaho most heavily populated by CAFOs. See ICL GW Report, *supra* note 20, at 5-6, 9; *supra* note 19. Other states require exactly this to ensure compliance with NPDES permits and protect water quality. See California General NPDES Permit No. CAG011001 for CAFOs within the North Coast Region, at Attachment E Monitoring and Reporting Program.

waters.⁶⁰ This is necessary to monitor compliance with the Draft Permit’s “no dry weather discharge” provision.⁶¹

Until EPA requires representative effluent monitoring where appropriate to document discharges from CAFO production and land application areas, many of the terms and conditions of the Draft Permit will remain mere words on paper. EPA may not excuse CAFOs from the monitoring required of all NPDES permittees simply because it has created a legal fiction that these operations do not discharge. But even if that were the case, zero is an effluent limit, and the CWA requires CAFOs to demonstrate their compliance with it.

D. The Final Permit Must Require BPJ Limits for CAFO Pollutants with No ELG

EPA essentially treats CAFO waste as only containing nutrients that are beneficial to crop production if applied at agronomic rates.⁶² Under this approach, any other pollutants of concern that may be found in CAFO waste, but that are not beneficial to or utilized by crops, are not considered or regulated under the NPDES program. Yet CAFO waste contains a variety of other pollutants including solids (feed, hair, feathers, etc.); salts; trace elements such as arsenic, copper, selenium, zinc, cadmium, molybdenum, nickel, lead, iron, manganese, aluminum, and pesticide ingredients; pathogens (bacteria, viruses, protozoa, fungi, prions, and helminths); antimicrobials (antibiotics and vaccines); hormones (both natural and synthetic); pesticides; soaps; and disinfectants.⁶³

Regarding pollutants for which no ELG has been established, EPA regulations require case-by-case effluent limitations based on Best Professional Judgment (“BPJ”).⁶⁴ BPJ effluent limitations can take the form of numerical limitations or BMPs. Recent EPA guidance further clarifies that permitting agencies must establish BPJ limits for pollutant discharges not covered by the applicable ELGs:

⁶⁰ See LPECL Admin, *Preferential Flow of Manure in Tile Drainage*, Livestock and Poultry Environmental Learning Community (Mar. 5, 2019), <https://lpecl.org/preferential-flow-of-manure-in-tile-drainage/> (last visited Dec. 9, 2019) (“Application of liquid animal manures to soils with subsurface drainage has been linked to contamination of the effluent with nutrients, particulate organic matter, estrogens, bacteria, and antibiotics.” (citations omitted)); California General NPDES Permit No. CAG011001 for CAFOs within the North Coast Region at F-31 to F-32 (“Tile drainage water may contain various agricultural pollutants, including nutrients and salts.”). Many other states require tile drain outfall monitoring. *See, e.g.*, Michigan DEQ, NPDES Permit No. MIG010000 for CAFOs (2015) at B.3.b.4 (requiring inspection before and after application).

⁶¹ Draft Permit at II.B.9.

⁶² *See* Draft Permit Section II.B (focusing exclusively on the nutrients in CAFO waste land applications); *id.* at Section III.A.2.g.i (only requiring manure to be tested for phosphorus and nitrogen).

⁶³ EPA, Office of Water, 820-R-13-002, Literature Review of Contaminants in Livestock and Poultry Manure and Implications for Water Quality (July 2013), at 2; University of Idaho Extension, CIS 1156, Dairy Manure Field Applications—How Much Is too Much?, <https://www.extension.uidaho.edu/publishing/pdf/CIS/CIS1156.pdf> (last visited Dec. 9, 2019) (discussing soluble salts accumulation and “concern[] about the accumulation of copper (Cu) in the soil because of the application of dairy wastes to agricultural fields”).

⁶⁴ 40 C.F.R. § 125.3; 33 U.S.C. § 1342(a)(1) (authorizing EPA to issue permit conditions “necessary to carry out the provisions of the [CWA]”).

Where EPA has not promulgated technology-based effluent guidelines for a particular class or category of industrial discharger, *or where the technology-based effluent guidelines do not address all wastestreams or pollutants discharged by the industrial discharger*, EPA must establish technology-based effluent limitations on a case-by-case basis in individual NPDES permits, based on its best professional judgment or “BPJ.”

...

[A]n authorized state must include technology-based effluent limitations in its permits for pollutants not addressed by the effluent guidelines for that industry. 33 USC § 1314(b); 40 CFR § 122.44(a)(1), 123.25, 125.3. In the absence of an effluent guideline for those pollutants, the CWA requires permitting authorities to conduct the “BPJ” analysis discussed above on a case-by-case basis for those pollutants in each permit.⁶⁵

CAFOs are capable of discharging a variety of pollutants with no established ELGs, as explained further in sections E and K. This includes CAFO waste handled at production areas and land applied to fields, as well as discharges of pollutants from CAFO ventilation systems. Many pollutants found in CAFO waste applied to agricultural fields are not subject to agronomic rate considerations because they are not nutrients available for use by crops. Instead, they must be treated as what they are: pollutants that CAFOs produce, handle, and dispose of in ways that potentially result in discharges to jurisdictional waters. These pollutants and those discharged by ventilation systems do not have ELGs and thus require EPA to develop BPJ limitations sufficient to protect against unpermitted discharges to jurisdictional waters.

E. The Draft Permit Requires Inadequate Sampling of Soils and CAFO Waste

FWW supports EPA’s requirement of annual soil tests for land application sites in the Draft Permit,⁶⁶ which is more protective than its ELG requirement of a phosphorus soil test only every five years.⁶⁷ However, a timeframe for when sampling must occur and clear requirements for representative sampling would be an appropriate additional safeguard. It is critical that current and actual soil conditions are understood before CAFO waste is applied to agricultural fields. As the University of Idaho Bulletin # 704 regarding soil sampling states, “soil sampling is also one of the most important steps in a sound crop fertilization program.”⁶⁸ CAFOs “should take soil samples as close as possible[,]” ideally “2 to 4 weeks before . . . fertilizing the crop.”⁶⁹ Because the University of Idaho Bulletin # 704 does not mandate this common sense practice, FWW asks that EPA establish a clear period of time prior to waste application in which CAFOs

⁶⁵ James A. Hanlon, Director, EPA Office of Wastewater Management, *National Pollutant Discharge Elimination System (NPDES) Permitting of Wastewater Discharges from Flue Gas Desulfurization (FGD) and Coal Combustion Residuals (CCR) Impoundments at Steam Electric Power Plants*, at Attachment A 1-2 (Jun. 7, 2010). Although this Memorandum discussed coal plant discharge limits, the statutory requirement to establish technology-based limits using BPJ is equally applicable across industries.

⁶⁶ Draft Permit at II.B.6.

⁶⁷ 40 C.F.R. 412.4(c)(3).

⁶⁸ Draft Permit Appendix G, at 2.

⁶⁹ *Id.*

must conduct this sampling to avoid early sampling that does not capture actual and current soil conditions. For example, if soil samples are taken early in the year, potentially many months before land applications will occur, actual soil conditions may no longer be understood and CAFO waste may be overapplied. A variety of factors could make dated soil samples inappropriate tools for ensuring agronomic rate applications including other nutrient applications, drift from nutrient applications to nearby fields, or re-deposition of nitrogen lost to the atmosphere from CAFO waste from volatilization during storage and handling.⁷⁰

The Draft Permit should also make clear that soil samples must be representative of actual conditions on the target field. As University of Idaho Bulletin # 704 notes, “[a]n absolute minimum of 10 subsamples from each sampling unit” should be taken, especially for irregular fields, as this is “necessary to obtain an acceptable [overall] sample.”⁷¹ Since the Bulletin is merely suggestive, EPA should include a clear and mandatory permit condition along these lines.

Similarly, FWW supports at least annual manure sampling as outlined in the Draft Permit,⁷² but EPA should establish more stringent requirements. First, EPA should make clear in the Final Permit that such manure samples must be representative of the material that will be applied by the CAFO. University of Idaho Manure and Wastewater Sampling CIS 1139 notes that “proper sampling is the key to reliable manure analysis,” but only suggests the need for multiple and representative samples.⁷³ Requiring “compliance” with such open-ended and non-mandatory technical standards is inadequate; EPA must go farther and require multiple, representative samples in such a way as to ensure accurate understanding of what the CAFO is spreading onto fields.⁷⁴

And as with soil sampling, EPA should mandate that manure sampling be conducted shortly before land application. The Draft Permit gives passing reference to University of Idaho Manure and Wastewater Sampling CIS 1139, but does not mandate anything from the guidance and fails to mention anything regarding when samples must be taken.⁷⁵ CIS 1139 suggests that CAFOs conduct manure sampling “as close to the date of application as practical...or within 30 days” at the earliest.⁷⁶ EPA should clearly incorporate and mandate this standard. If manure is

⁷⁰ See PennState Extension, *Pennsylvania Nutrient Management Program: Irrigation of Liquid Manures*, <https://extension.psu.edu/programs/nutrient-management/educational/manure-storage-and-handling/irrigation-of-liquid-manures> (last visited Dec. 9, 2019) (noting a “typical problem[] with irrigating liquid manure include[s]... overspray or drift of liquid manure onto neighboring properties”); Larry J. Puckett, USGS National Water-Quality Assessment Program, *Water-Resources Investigations Report 94-4001* (last modified Dec. 7, 2016), *Nonpoint and Point Sources of Nitrogen in Major Watersheds of the United States*, <https://pubs.usgs.gov/wri/wri944001/wri944001.html> (last visited Dec. 9, 2019) (explaining that concentrated animal agriculture causes atmospheric nitrogen deposition); USDA, Economic Research Service, *Managing Manure to Improve Air and Water Quality* at 5, https://www.ers.usda.gov/webdocs/publications/46336/28994_err9b.pdf?v=0 (last visited Dec. 9, 2019) (showing that nitrogen off gasses from animal waste lagoons and CAFO ventilation systems).

⁷¹ Draft Permit Appendix G, at 4.

⁷² Draft Permit at II.B.6.

⁷³ Draft Permit Appendix F.

⁷⁴ University of Idaho Manure and Wastewater Sampling CIS 1139 suggests “at least eight” sample sites for storage lagoon liquid, for example. Draft Permit Appendix F, at 2.

⁷⁵ Draft Permit at III.A.g.i.

⁷⁶ Draft Permit Appendix F, at 1.

land applied at different times throughout the year, the Draft Permit should require sampling shortly prior to each and every period of application.

Additionally, EPA should expand the pollutants for which CAFOs must conduct sampling. The Draft Permit requires that manure only be sampled for nitrogen and phosphorous.⁷⁷ But, as explained above, CAFO waste is known to contain an array of other pollutants of concern.⁷⁸ EPA should require CAFO waste that will be applied to fields be analyzed for all of the constituent pollutants that EPA has already found it likely to contain, and these sampling requirements should correspond to the pollutants for which EPA determines it must establish BPJ effluent limits. If laboratory analysis determines that other pollutants of concern are present in the samples, appropriate restrictions on land application practices must be in place to ensure harmful constituents are not disposed of on agricultural fields in such a way that will likely lead to a discharge to surface waters.

F. The Final Permit Should Contain Stronger Waste Storage Requirements

Appropriate waste storage structures are an integral part of ensuring CAFOs do not discharge pollutants in violation of permit conditions. EPA should include two additional permit conditions and revise one provision pertaining to waste storage structures.

First, EPA should include phase-out requirements for old manure lagoons and other storage facilities that no longer meet the most current EPA and NRCS standards. Antiquated storage facilities pose an unacceptable threat, and should not be allowed to simply continue operating until they fail. As noted above, the regions of Idaho most populated with CAFOs overlie highly fractured basalt geology that allows nutrients to infiltrate groundwater, which is well-documented to have direct hydrological connection to jurisdictional waters.⁷⁹

Second, EPA should develop its own standards for the technical specifications of waste storage facilities. The Draft Permit relies on NRCS standards,⁸⁰ which have proven insufficient after years of water quality impairments across the United States. In fact, NRCS standards expressly allow for leaks of pollutants, which can result in discharges of pollutants to jurisdictional waters.⁸¹ Specifically, EPA should require that all waste impoundment structures that are not virtually impermeable (such as concrete manure storage facilities) phase in synthetic liners with leak monitoring systems as soon as practicable. Synthetic liners with leak detection

⁷⁷ Draft Permit at II.B.6.

⁷⁸ See *supra* note 63 and accompanying text.

⁷⁹ See *supra* note 30.

⁸⁰ Draft Permit at III.B.; see NRCS, 359-CPS-1, Conservation Practice Standard No. 359: Waste Treatment Lagoon (Oct. 2003).

⁸¹ NRCS, 359-CPS-1, Conservation Practice Standard No. 359: Waste Treatment Lagoon at 1, 4 (Oct. 2003) (discussing “minimizing the potential of lagoon liner seepage,” and cross-referencing Agricultural Waste Management Field Handbook, Appendix 10D); NRCS, Agricultural Waste Management Field Handbook, Chapter 10 at 10D-4 (Aug. 2009), <https://www.wcc.nrcs.usda.gov/ftpref/wntsc/AWM/handbook/ch10.pdf> (last visited Dec. 9, 2019) (recognizing that even the more protective synthetic liners can only “reduce seepage,” not eliminate it).

systems are in use at some CAFOs already, and are the appropriate BAT standard that Idaho CAFOs should be held to.⁸²

Finally, EPA should revise the Draft Permit Section III.A.2.a.i to eliminate the ability of a CAFO to seek coverage under this permit without having in place sufficient waste storage capacity. As written, the Draft Permit appears to enable a CAFO to begin or continue housing animals even if its waste storage capacity evaluation determines the facility has “less than the minimum capacity requirements specified in Section II.A.1.” This does not make sense and could easily lead to CAFOs operating without needed capacity when the time comes—instead, every CAFO must have adequate waste storage capacity *before* its Notice of Intent is approved.⁸³

G. EPA Should Establish Additional Requirements for Transfers of CAFO Waste to Third Parties

As written, the Draft Permit’s safeguards for avoiding discharges of pollutants to jurisdictional waterways via land application only apply to “land under the control of the CAFO owner/operator,”⁸⁴ and the requirements for when a CAFO instead transfers its waste are extremely sparse. EPA must include additional safeguards for when CAFO owners/operators transfer CAFO waste by sale or gift to third parties. This is a necessary and appropriate addition because as NPDES-permitted industrial facilities, CAFO waste management practices of all kinds are central to attaining the goal of the CWA. Absent greater protections, CAFOs have an incentive to transfer their waste to third parties without conducting any due diligence as to the likely impacts on water quality; third party land application brings all the same risks of water quality impairments attendant to a CAFO’s own land application. When a CAFO generates waste, which has a high potential to pollute jurisdictional waters, it should be required to responsibly deal with that waste, even when doing so means transferring it to a third party.

In addition to the conditions outlined at III.D of the Draft Permit, CAFO owners/operators should be required to do the following before being permitted to transfer waste to a third party: communicate to any recipient all land application guidelines and best management practices that would apply were the CAFO land applying the waste to lands under its control, inquire as to whether the third party intends to responsibly handle and utilize the waste and receive an affirmative response, inquire where and in what quantities the recipient intends to land apply any of the transferred waste, and record and report the preceding items to EPA and Idaho officials. CAFO owners/operators should retain some degree of responsibility for

⁸² See, e.g., Enviroscan, *Liner Leak Detection*, <http://www.enviroscan.com/home/liner-leak-detection> (last visited Dec. 9, 2019) (explaining that “many, if not most, liners have leaks” and describing its product services to detect such leaks); Press Release, Western Environmental Law Center (Dec. 12, 2016), *WA Industrial Dairy Installs Court-Ordered Manure Lagoon Liners to Protect Groundwater*, <https://westernlaw.org/wa-industrial-dairy-installs-court-ordered-manure-lagoon-liners-protect-groundwater-news-rel/> (last visited Dec. 9, 2019).

⁸³ As a stark example of the consequences of allowing a CAFO to populate with animals prematurely, without adequate storage capacity and preparation, EPA needs to look no further than across the border to eastern Oregon and the failed Lost Valley mega-dairy. See, e.g., Courtney Flatt, *Troubled Oregon Dairy Announces Shut Down*, OPB (Oct. 24, 2018), <https://www.opb.org/news/article/oregon-lost-valley-dairy-shut-down/> (last visited Dec. 9, 2019) (“Most of the environmental problems at the dairy stemmed from improper storage of manure and other waste and mismanagement.”).

⁸⁴ Draft Permit at 9.

how and to whom they transfer their waste, lest this loophole become a go-to avenue for disposing of a CAFO's waste irresponsibly. These measures are necessary to safeguard against CAFOs transferring waste to another person who is incapable of responsibly handling such wastes and from CAFO owners/operators using third parties to do what they themselves are prohibited from doing under the terms of their NMP and this General Permit.

H. Land Application of Waste from Anaerobic Digesters

An increasing number of CAFOs in Idaho are using or are considering using anaerobic digesters to capture methane from animal waste generated at CAFOs.⁸⁵ EPA may not ignore the use of digestate—the leftover solid and liquid waste after methane capture—as a fertilizer for land applications. Digestate poses heightened risks to water quality, and merely spreading this digestate on fields as though it were no different than undigested CAFO waste is not BAT, in violation of the CWA and EPA's regulations. NRCS warns that nitrogen, phosphorus, and other elements in digestate are more water soluble than in undigested CAFO waste, making it more prone to leaching and runoff and posing a unique risk to surface water.⁸⁶ Until EPA conducts a thorough assessment of the water pollution implications of land applying digestate, and how this affects agronomic rates, the Draft Permit should prohibit the use of liquid or solid digestate in land application practices.

I. The Final Permit Must Prohibit Spray Irrigation

The Draft Permit should expressly prohibit spray irrigation of manure given the unique risks associate with this practice.⁸⁷ Using spray irrigation threatens surface waters because this practice can result in excessive application that causes waste ponding, leaching, and potential dry weather runoff.⁸⁸ Spray irrigation also has the potential to cause drift to surface waters nearby

⁸⁵ American Biogas Council, *Biogas State Profile: Idaho* (last updated Aug. 7, 2015), <https://americanbiogascouncil.org/wp-content/uploads/2019/08/ID-State-Biogas-Profile.pdf> (last visited Dec. 9, 2019); Laurie Welch, *Company Announces \$240 Million Plan to Build 6 Anaerobic Digesters Near Burley*, MagicValley.com (June 4, 2019), https://magicvalley.com/business/agriculture/company-announces-million-plan-to-build-anaerobic-digesters-near-burley/article_b6f1b9c7-90c0-558f-a007-31a85f0a52e7.html (last visited Dec. 9, 2019).

⁸⁶ NRCS, 366-CPS-1, Conservation Practice Standard No. 366: Anaerobic Digester, at 6 (“Land application of digester effluent, compared with fresh manure, may have a higher risk for both ground and surface water quality problems. Compounds such as nitrogen, phosphorus, and other elements become more soluble due to anaerobic digestion and therefore have higher potential to move with water.”).

⁸⁷ Center-pivot spray irrigation systems used by Idaho CAFOs are prevalent. See Ronald E. Sheffield, Matthew W. Thompson, University of Idaho College of Agricultural and Life Sciences Research Bulletin: RES164, *Odor Assessments of Idaho Livestock Farms and Manure Application Practices* (2004), <https://www.extension.uidaho.edu/publishing/pdf/RES/RES0164.pdf> (last visited Dec. 9, 2019).

⁸⁸ See Wisc. Manure Irrigation Workgroup, *Considerations for the Use of Manure Irrigation Practices* at 40 (Apr. 2016), <https://green.extension.wisc.edu/files/2017/09/Manure-Irrigation-Workgroup-Report-2016.pdf> (last visited Dec. 9, 2019) (hereinafter *Considerations for the Use of Manure Irrigation Practices*); Water Watch Wisconsin, *Manure Spray Under Scrutiny*, Wisc. Center for Investigative Journalism (Apr. 27, 2014), <https://www.wisconsinwatch.org/2014/04/manure-spraying-under-scrutiny/> (last visited Dec. 9, 2019) (hereinafter *Manure Spray Under Scrutiny*).

target fields.⁸⁹ These irrigation systems are also reliant on pipes and hoses to connect lagoons with sprayfields, which can leak or break, resulting in unpermitted discharges.⁹⁰

Spray irrigation also results in higher rates of evaporation and volatilization of a range of CAFO pollutants.⁹¹ Several studies have found that when manure is not incorporated into soil after application, more than half of the manure ammonia is lost, likely due to volatilization.⁹² This directly impacts surface waters because volatilized ammonia will re-deposit into waterways.⁹³

J. EPA Must Prohibit Land Applications When Current or Impending Rainfall Is Capable of Producing Unauthorized Discharge

The Draft Permit does not appear to include a condition requiring, or even suggesting, CAFOs delay land applications of waste if current or impending precipitation capable of producing an unauthorized discharge is forecasted. This is a typical requirement in other CAFO NPDES permits, and one EPA strongly encourages delegated states to implement;⁹⁴ EPA should clearly require it in this permit as well. Even the currently operative CAFO general permit from 2012 contains this consideration by incorporating NRCS Conservation Practice 590.⁹⁵ As a result, if the Final Permit does not include this prohibition and lacks a considered justification and finding of necessity, it would violate the CWA's express anti-backsliding prohibition.⁹⁶

When the National Weather Service forecasts rainfall exceeding one-half inch, or less if a lesser rainfall event is capable of producing unauthorized discharge, during the planned time of application or within 24 hours after the planned time of application, CAFOs must delay land application because rainfall onto freshly applied waste is likely to result in discharges. Such a requirement follows logically from the restrictions already deemed essential in the Draft Permit,

⁸⁹ Considerations for the Use of Manure Irrigation Practices, *supra* note 88, at 30-33, 40-42; Nate Seltenrich, *Manure Irrigation: Environmental Benefits, Potential Human Health Risks*, 125(12) ENV'T'L HEALTH PERSPECTIVE (Dec. 12, 2017), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5963588/> (last visited Dec. 9, 2019); *Manure Spray Under Scrutiny*, *supra* note 88.

⁹⁰ NRDC, *Cesspools of Shame: How Factory Farm Lagoons and Sprayfields Threaten Environmental and Public Health* at 29 (July 2001), <https://www.nrdc.org/sites/default/files/cesspools.pdf> (last visited Dec. 9, 2019) (hereinafter *Cesspools of Shame*).

⁹¹ *Id.* at 17; Iowa State University Extension, *Using Manure Nutrients for Crop Production* at Tbl. 2 (May 2016), <https://store.extension.iastate.edu/product/Using-Manure-Nutrients-for-Crop-Production> (last visited Dec. 9, 2019) (follow free "download" link to view document) (showing that spray irrigation has the highest volatilization rate of various application practices).

⁹² *Cesspools of Shame*, *supra* note 90, at 37.

⁹³ See, e.g., Cassey Ng, *Agriculture and Water Pollution Risks*, 3 UTAH AGRICULTURE SCIENCE J. 34, 38 (Nov. 2017), https://www.researchgate.net/profile/Casey_Ng3/publication/320867723_Agriculture_and_Water_Pollution_Risks/links/59ffe1b9aca272347a2aff22/Agriculture-and-Water-Pollution-Risks.pdf (last visited Dec. 9, 2019) ("Volatilized ammonia is eventually deposited into waterways.").

⁹⁴ See EPA, NPDES Writers' Manual for CAFOs, *supra* note 3, at 6-15 ("In general, EPA strongly encourages states to prohibit application to frozen, snow-covered, or saturated ground, and when the forecast calls for rain in an amount that is likely to produce runoff...."); EPA, Region 6, NPDES General Permit for Discharges from CAFOs in New Mexico (NMG01000) at II.A.5.b.ii.

⁹⁵ 2012 General Permit Appendix B pg 7.

⁹⁶ 33 U.S.C. § 1342(o).

namely the prohibition on applying to saturated ground. There is no reason to only prohibit applying waste when rain has already saturated ground, but not when rainfall is actively or imminently going to produce similar conditions that make unauthorized discharges likely.

K. Discharges from Ventilation Systems

The Final Permit should also make clear that discharges from CAFO ventilation systems are point source discharges covered by the CWA, and establish permit conditions necessary to protect waterways from this pollution. The term “pollutant” is defined very broadly in the CWA,⁹⁷ and EPA’s position is that CAFO ventilation fans are capable of discharges covered by the CWA.⁹⁸ These ventilation systems are used by various types of facilities, and can directly discharge pollutants such as manure, dust, litter, ammonia, and animal debris (feathers, hair, etc.) into nearby jurisdictional waters or conduits to jurisdictional waters, such as production area ditches or channels.

EPA must include BPJ conditions in the Permit regarding the use of ventilation systems. As EPA has stated, “there are other circumstances where a permit writer must use BPJ or special permit conditions to address specific discharges at CAFOs that are not included in the ELG. For example, the CAFO ELG does not address ... pollutants (such as manure, feathers, and feed) that have fallen to the ground immediately downward from confinement building exhaust ducts and ventilation fans”⁹⁹

L. Reassess 25-year, 24-hour Storm Event Standards

EPA should require Idaho CAFOs to plan for the extreme precipitation events made increasingly more common by climate change.¹⁰⁰ Extreme precipitation events are likely to cause overflows of stored waste at CAFO production areas designed to specifications based on outdated historical precipitation patterns. The consequences of storage lagoon overflows are dire, as shown by recent events elsewhere in the nation.¹⁰¹ The Draft Permit does not specifically define this standard, but a CAFO operator could reasonably look to EPA’s regulatory definition for guidance to determine the nature of a “25-year, 24-hour storm event” for their operation. Unfortunately, EPA anchors its regulatory definition to nearly 60-year-old NRCS data.¹⁰² Given

⁹⁷ 33 U.S.C. § 1362(6).

⁹⁸ EPA, 2010 Guidance, *supra* note 32, at 2, 14; see *Nat’l Pork Producers Council*, 635 F.3d at 748 (discussing EPA’s position that “litter released through confinement house ventilation fans” would be covered discharges, and essentially agreeing with this assessment, holding that EPA’s position “merely restate[s] section 1342’s prohibition against discharging pollutants without an NPDES permit”).

⁹⁹ EPA, NPDES Writers’ Manual for CAFOs, *supra* note 3, at 4-18.

¹⁰⁰ NOAA National Centers for Env’t Information, *State Climate Summaries: Idaho*, <https://statesummaries.ncics.org/chapter/id/> (last visited Dec. 9, 2019) (“the number of extreme precipitation events (days with precipitation greater than 1 inch) has been above the long-term average over the past decade”).

¹⁰¹ See, e.g., Kendra Pierre-Louis, *Lagoons of Pig Waste Are Overflowing after Florence. Yes, That’s As Nasty As It Sounds.*, NEW YORK TIMES (Sept. 19, 2018), <https://www.nytimes.com/2018/09/19/climate/florence-hog-farms.html> (last visited Dec. 9, 2019).

¹⁰² 40 C.F.R. § 412.2(i) (relying on National Weather Service Technical Paper No. 40 from May 1961). EPA’s ELGs for certain CAFOs calls for waste storage capacity based on “actual climate data for the previous 30 years.” 40 C.F.R. § 412.46(a)(1)(iii). This may still not be protective enough, but this at least should be clearly incorporated into the final Permit and applied to all CAFOs in Idaho.

that dated and no longer applicable set of metrics, EPA should establish a more protective and accurate standard based on the most current data that ensures CAFOs' waste impoundments are capable of accommodating today's more extreme 25-year, 24-hour storms. EPA has asked other state authorities to do just this.¹⁰³ If EPA does not require Idaho CAFOs to prepare for current conditions, facilities will be able to avail themselves of a permit shield for overflows and other discharges resulting from storms that are no longer 25-year, 24-hour events, but rather are the new normal.

IV. CONCLUSION

CAFOs in Idaho are having serious impacts on the State's jurisdictional waters, and EPA needs to bring these facilities' pollution under control to protect and improve water quality as required by the CWA. Commenters appreciate the steps forward EPA has included in the Draft Permit, but respectfully request that it strengthen the Permit with the above conditions and requirements that are necessary to protect water quality in Idaho from an out-of-control CAFO industry. And to give the Permit effect and make these improvements lead to actual improvements in water quality, EPA must establish a presumption of discharge for certain CAFOs that requires them to obtain NPDES permit coverage. Please contact us with any questions you may have regarding any of the above comments and why the proposed revisions are necessary in Idaho. Thank you for your attention and consideration.

Sincerely,



Tyler Lobdell
Staff Attorney, Food & Water Watch
Boise, Idaho 83706
tlobdell@fwwatch.org
(208) 209-3569

Buck Ryan
Executive Director, Snake River Waterkeeper
2123 N. 16th Street
Boise, Idaho 83702

¹⁰³ Email from Julianne Socha, EPA Region 5 Water Division, to Sylvia Heaton et al., Michigan Dept. of Environment, Great Lakes, and Energy, at para. 13 (Sept. 25, 2019) (obtained via public records request) (include here as Appendix C) (noting that the Michigan draft general permit for CAFOs references a 1992 source and states that "EPA encourages the State to use the most current rainfall probability data available to establish magnitudes of rainfall events" for the 25-year, 24-hour rainfall event standard included in permit Certificates of Coverage).

Appendix A

BEFORE THE UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

FOOD & WATER WATCH, ARKANSAS RIGHTS KOALITION, ASSATEAGUE COASTAL TRUST (MARYLAND), ASSOCIATION OF IRRITATED RESIDENTS (CALIFORNIA), BUFFALO RIVER WATERSHED ALLIANCE (ARKANSAS), CENTER FOR BIOLOGICAL DIVERSITY, CENTER FOR FOOD SAFETY, CONCERNED CITIZENS AGAINST INDUSTRIAL CAFOS (MARYLAND), DAKOTA RURAL ACTION (SOUTH DAKOTA), DALLAS COUNTY FARMERS AND NEIGHBORS (IOWA), DES MOINES WATER WORKS (IOWA), DODGE COUNTY CONCERNED CITIZENS (MINNESOTA), DON'T WASTE ARIZONA, THE ENVIRONMENTAL INTEGRITY PROJECT, GRAND RIVERKEEPER (OKLAHOMA), HELPING OTHERS MAINTAIN ENVIRONMENTAL STANDARDS (ILLINOIS), ILLINOIS CITIZENS FOR CLEAN AIR & WATER, INSTITUTE FOR AGRICULTURE AND TRADE POLICY, INTERFAITH WORKER JUSTICE (NEW MEXICO), IOWA CITIZENS FOR COMMUNITY IMPROVEMENT, JEFFERSON COUNTY FARMERS & NEIGHBORS (IOWA), JOHNS HOPKINS CENTER FOR A LIVABLE FUTURE, KEWAUNEE CITIZENS ADVOCATING RESPONSIBLE ENVIRONMENTAL STEWARDSHIP (WISCONSIN), LAND STEWARDSHIP PROJECT (MINNESOTA), MIDWEST ENVIRONMENTAL ADVOCATES (WISCONSIN), MISSOURI RURAL CRISIS CENTER, MOMS ACROSS AMERICA EASTERN SHORE CHAPTER (MARYLAND), MONTGOMERY TOWNSHIP FRIENDS OF FAMILY FARMS (PENNSYLVANIA), NORTH CAROLINA ENVIRONMENTAL JUSTICE NETWORK, OZARK RIVER STEWARDS (ARKANSAS), PATUXENT RIVERKEEPER (MARYLAND), POWESHIEK COMMUNITY ACTION TO RESTORE ENVIRONMENTAL STEWARDSHIP (IOWA), PRESERVE OUR SHORE ACCOMACK COUNTY (VIRGINIA), AND RIO VALLE CONCERNED CITIZENS (NEW MEXICO),

Petitioners,

v.

SCOTT PRUITT, ADMINISTRATOR,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,

Respondent.

PETITION TO REVISE THE CLEAN WATER ACT REGULATIONS FOR
CONCENTRATED ANIMAL FEEDING OPERATIONS

TABLE OF CONTENTS

| | |
|---|-----------|
| I. INTRODUCTION | 1 |
| A. LEGAL BACKGROUND..... | 2 |
| a. Citizens’ Right to Petition and EPA’s Duty to Respond | 2 |
| b. EPA’s Duty to Regulate CAFOs under the Clean Water Act..... | 3 |
| B. FACTUAL BACKGROUND..... | 5 |
| a. Growth and Consolidation in Animal Production | 5 |
| b. CAFO Water Pollution Impacts..... | 6 |
| c. Inadequate CAFO Regulation under the Clean Water Act | 12 |
| C. SUMMARY OF RELIEF REQUESTED | 14 |
| II. ARGUMENT..... | 14 |
| A. EPA’S CAFO REGULATIONS MUST ENSURE THAT ALL DISCHARGING CAFOs OBTAIN NPDES PERMITS..... | 15 |
| a. EPA Should Establish an Evidentiary Presumption that CAFOs with Certain Characteristics Actually Discharge | 15 |
| i. EPA Has Clear Authority to Establish a Presumption that Certain CAFOs Discharge 16 | |
| ii. EPA Has Sufficient Evidence to Support a Presumption that CAFOs with Certain Characteristics Discharge..... | 17 |
| iii. Establishing a Presumption that Certain CAFOs Discharge is Necessary to Achieve the Purposes of the Act | 21 |
| b. EPA Must Revise its Interpretation of the Agricultural Stormwater Exemption to Give Effect to Congress’ Intent that No CAFO–Related Discharges Are Exempt from the Act’s Permitting Requirements | 22 |
| i. EPA’s Current Interpretation of the Agricultural Stormwater Exemption..... | 23 |
| ii. EPA Has Clear Authority to Revise its Interpretation of the Agricultural Stormwater Exemption as Requested in this Petition..... | 24 |
| iii. The Language and History of the Statute Indicate Congress’ Intent to Regulate All CAFO Pollution | 25 |
| c. EPA Must Ensure that Permitting Agencies Co-Permit Integrators and other Operators with Producers | 27 |
| d. EPA Should Revise the CAFO and Production Area Definitions and Designation Authorities, 40 C.F.R. § 122.23(b)-(c) | 29 |
| i. EPA Should Revise the Definition of Production Area | 30 |
| ii. EPA Should Revise or Eliminate the “Medium CAFO” Category | 31 |
| iii. EPA Should Impose Meaningful Limits on States’ Discretion in Designating AFOs as CAFOs | 32 |

| | |
|--|-----------|
| B. EPA MUST STRENGTHEN CAFO NPDES PERMITS TO ADEQUATELY PROTECT WATER QUALITY | 33 |
| a. EPA Must Strengthen and Clarify the Requirements Applicable to All CAFOs, 40 C.F.R. § 122.42(e) | 34 |
| i. EPA Must Require Water Quality Monitoring in CAFO NPDES Permits | 34 |
| ii. EPA Must Strengthen Annual Reporting Requirements | 37 |
| b. EPA Must Revise the Large CAFO Effluent Guidelines, 40 C.F.R. § 412 | 37 |
| i. The CAFO ELGs Should Apply to All CAFOs | 38 |
| ii. EPA Must Establish Application Disclosure requirements, BAT and NSPS Limits, and Monitoring Requirements for Additional CAFO Pollutants of Concern | 39 |
| iii. The CAFO ELGs’ NMP Requirements Must Prioritize Protecting Water Quality | 41 |
| iv. Technical Standards Must Prohibit Practices Known to Harm Water Quality | 46 |
| v. State Permitting Programs Cannot Effectively Fill the Gaps Left by the Absence of Strong National Standards | 55 |
| vi. EPA’s Assumptions Regarding the Frequency of Storm Events Are No Longer Accurate | 56 |
| III. CONCLUSION..... | 58 |

I. INTRODUCTION

The goal of the Clean Water Act (CWA or Act) is to eliminate the discharge of pollutants into waterways.¹ As one way of making progress toward that goal, the Act generally instructs the Environmental Protection Agency (EPA) to regulate polluters by identifying, and requiring the use of, state-of-the-art pollution-control technology for each industry. EPA has made significant strides in meeting its CWA mandate to regulate point source pollution from most industrial and municipal sources. However, the Agency has made very little progress in its efforts to regulate pollution from concentrated animal feeding operations (CAFOs). As a result, the agricultural sector, including CAFOs, remains largely unregulated and is now the nation's leading source of water quality impairments.² The Agency's current CAFO regulations are plainly not up to the task of protecting our waterways from industrial livestock operations.

EPA has attempted to improve its CAFO regulatory scheme over the past fifteen years, but has been largely unsuccessful, in part due to adverse judicial decisions, and in part due to the Agency's failure to craft strong regulations. Court challenges to EPA's rules are responsible for some of EPA's setbacks; the *Waterkeeper Alliance* and *National Pork Producers Council* decisions limited the universe of CAFOs required to obtain CWA permits under EPA's current regulatory approach. Yet the core elements of CAFO permits established in EPA's 2003 CAFO rule are also inadequate, and are still in effect. The current regulations fail to require water monitoring, do not prohibit practices known to harm water quality, generally ignore numerous pollutants of concern, place critical decisions about waste management in the hands of state agencies, and exempt most chronic CAFO discharges from permit requirements through an unreasonably broad reading of the agricultural stormwater exemption.³ In short, the existing regulations are far too weak, and do not apply to enough of the industry, to protect water quality.

EPA must take further action to fulfill its CWA obligations, and the Agency's 2003 and 2008 rulemaking attempts do not in any way lessen this duty. EPA maintains clear authority to strengthen its approach to CAFO regulation in numerous ways, and has amassed a large volume of new information about CAFO pollution since it put forth the 2001 proposal that largely shaped the current regulations. This petition lays out a regulatory course of action for EPA to better use its authority to control CAFO pollution and further the objectives of the Act.

¹ 33 U.S.C. § 1251(a)(1).

² National Pollutant Discharge Elimination System Regulation and Effluent Limitation Guidelines and Standards for Concentrated Animal Feeding Operations, 68 Fed. Reg. 7179, 7237 (Feb. 12, 2003) (codified at 40 C.F.R. pts. 9, 122, 123, 412) [hereinafter 2003 CAFO Rule].

³ *Id.* § 122.23(e). This exemption excludes "agricultural stormwater discharge" from the definition of "point source" though the former term is not defined in the Act. 42 U.S.C. § 1362(14).

Food & Water Watch, Arkansas Rights Coalition, Assateague Coastal Trust (Maryland), Association of Irrigated Residents (California), Buffalo River Watershed Alliance (Arkansas), Center for Biological Diversity, Center for Food Safety, Concerned Citizens Against Industrial CAFOs (Maryland), Dakota Rural Action (South Dakota), Dallas County Farmers and Neighbors (Iowa), Des Moines Water Works (Iowa), Dodge County Concerned Citizens (Minnesota), Don't Waste Arizona, the Environmental Integrity Project, Grand Riverkeeper (Oklahoma), Helping Others Maintain Environmental Standards (Illinois), Illinois Citizens for Clean Air & Water, Institute for Agriculture and Trade Policy, Interfaith Worker Justice (New Mexico), Iowa Citizens for Community Improvement, Jefferson County Farmers & Neighbors (Iowa), Johns Hopkins Center for a Livable Future, Kewaunee Citizens Advocating Responsible Environmental Stewardship (Wisconsin), Land Stewardship Project (Minnesota), Midwest Environmental Advocates (Wisconsin), Missouri Rural Crisis Center, Moms Across America Eastern Shore Chapter (Maryland), Montgomery Township Friends of Family Farms (Pennsylvania), North Carolina Environmental Justice Network, Ozark River Stewards (Arkansas), Patuxent Riverkeeper (Maryland), Poweshiek Community Action to Restore Environmental Stewardship (Iowa), Preserve Our Shore Accomack County (Virginia), and Rio Valle Concerned Citizens (New Mexico) (collectively, Petitioners) hereby petition EPA to promulgate new CAFO regulations pursuant to the Administrative Procedure Act (APA), 5 U.S.C. § 551 et seq., and the CWA, 33 U.S.C. § 1251 et seq. The Petitioners collectively represent millions of citizens from across the United States, including many individuals adversely impacted by CAFO water pollution in their communities.

A. LEGAL BACKGROUND

a. Citizens' Right to Petition and EPA's Duty to Respond

The citizen right to petition the government originates in the First Amendment,⁴ and is codified and applied to federal agency regulations through the APA's requirement that "[e]ach agency shall give an interested person the right to petition for the issuance, amendment, or repeal of a rule."⁵ The APA also imposes an affirmative obligation on EPA to timely respond to this petition, by requiring that "[w]ith due regard for the convenience and necessity of the parties or their representatives and within a reasonable time, each agency shall proceed to conclude a matter presented to it."⁶ In the event EPA seeks to deny the petition in whole or in part, it must provide "[p]rompt notice" to the petitioners.⁷

The APA further grants a right of judicial review to "[a] person suffering legal wrong

⁴ U.S. Const. amend. I ("Congress shall make no law . . . abridging . . . the right of the people . . . to petition the Government for a redress of grievances").

⁵ 5 U.S.C. § 553(e).

⁶ *Id.* § 555(b).

⁷ *Id.* § 555(e).

because of agency action, or adversely affected or aggrieved by agency action,”⁸ which is defined to include the “failure to act.”⁹ In the event EPA fails to timely respond or improperly denies the petition in whole or part, courts “shall compel agency action unlawfully withheld or unreasonably delayed,”¹⁰ and “hold unlawful and set aside agency action, findings, and conclusions found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.”¹¹

b. EPA’s Duty to Regulate CAFOs under the Clean Water Act

The CWA’s objective is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters” by eliminating discharges of pollutants into navigable waters.¹² The National Pollutant Discharge Elimination System (NPDES) permitting program is the primary pollution control mechanism available to EPA and the states to regulate point source discharges.”¹³ When Congress specifically included “concentrated animal feeding operations” in the CWA’s definition of “point source,”¹⁴ it demonstrated unambiguous intent to control and continuously reduce discharges of pollution from the CAFO industry through the NPDES program. Developing and implementing effective CAFO NPDES regulations is therefore one of EPA’s clearest CWA obligations.

These regulations must ensure that the entire universe of discharging CAFOs is required to obtain NPDES permits, and that those permits will impose adequate conditions to track and restrict the industry’s pollution. The CWA requires EPA to meet certain criteria when establishing the permit requirements for a discharging industry. EPA imposes NPDES permit requirements through the development of national Effluent Limitation Guidelines (ELGs) for industrial source categories. ELGs establish the pollution control levels that industries and facilities must achieve for various types of pollutants, and must be based on several technology-based standards for different categories of pollutants.

Existing facilities are subject to: best available technology economically achievable (BAT) for priority and nonconventional pollutants, which include nitrogen, phosphorus, metals, and pharmaceuticals; best conventional pollutant control technology (BCT) for conventional pollutants, which include fecal coliform, biochemical oxygen demand, pH, oil and grease, and total suspended solids; and best practicable control technology currently available (BPT) for all

⁸ *Id.* § 702.

⁹ *Id.* § 551(13).

¹⁰ *Id.* § 706(1).

¹¹ *Id.* § 706(2)(A).

¹² 33 U.S.C. § 1251(a).

¹³ *Id.* § 1342.

¹⁴ *Id.* § 1362(14).

pollutants. New sources are subject to more stringent new source performance standards (NSPS) for all pollutants, based on the best available demonstrated control technology (BADT).¹⁵

EPA must consider various criteria when deriving each standard. BAT must take into account, *inter alia*, facility age, cost of achieving pollution reduction, and non-water quality environmental impacts. BCT must also take these factors into account, but in addition to the requirements that technologies be both available and economically achievable, EPA must consider the reasonableness of the relationship between a technology's cost and the pollution reductions achieved.¹⁶ New source performance standards must "reflect[] the greatest degree of effluent reduction which the Administrator determines to be achievable . . . including, where practicable, a standard permitting no discharge of pollutants."¹⁷

Such technology-based effluent limitations (TBELs) afford the *minimum* level of water quality protection required by the CWA,¹⁸ and permits must establish such limits for all pollutants present in a discharge.¹⁹ EPA has made clear that state permit writers must address pollutants omitted from federal ELGs by including best professional judgment (BPJ) limits on a case-by-case basis,²⁰ yet state CAFO permits typically do not control metals, pharmaceuticals, or other pollutants of concern with BPJ limits. EPA has authority to remedy this by including controls for the full suite of CAFO pollutants in its CAFO ELGs.

EPA must annually review, and if appropriate, revise, its ELGs for each source category.²¹ In its Final 2014 Effluent Guidelines Program Plan, the most recent final plan at the time of filing, EPA excluded the CAFO point source category from review altogether because it

¹⁵ *Id.* §§ 1311(b)(2)(A), 1314(b)(4)(A), 1314(b)(1)(A), 1316.

¹⁶ *Id.* §§ 1314(b)(2)(B), 1314(b)(4)(B); Revised National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitations Guidelines for Concentrated Animal Feeding Operations in Response to the Waterkeeper Decision, 73 Fed. Reg. 70418, 70463 (Nov. 20, 2008) [hereinafter 2008 CAFO Rule].

¹⁷ 33 U.S.C. § 1316(a)(1).

¹⁸ 40 C.F.R. § 122.44 ("[E]ach NPDES permit shall include conditions meeting the following requirements . . . Technology-based effluent limitations and standards based on: effluent limitations and standards promulgated under section 301 of the CWA, or new source performance standards promulgated under section 306 of CWA, on [sic] case-by-case effluent limitations determined under section 402(a)(1) of CWA, or a combination of the three, in accordance with § 125.3 of this chapter"); 40 C.F.R. § 125.3 ("Technology-based treatment requirements under section 301(b) of the Act represent the minimum level of control that must be imposed in a permit issued under section 402 of the Act").

¹⁹ 40 C.F.R. § 125.3(a)(2), requiring permits to contain technology-based limits for "conventional pollutants," "all toxic pollutants," and "all pollutants which are neither toxic nor conventional pollutants."

²⁰ *See* 33 U.S.C. § 1311(b)(2)(A); 40 C.F.R. § 125.3(c)-(d); James A. Hanlon, Director, EPA Office of Wastewater Management, *National Pollutant Discharge Elimination System (NPDES) Permitting of Wastewater Discharges from Flue Gas Desulfurization (FGD) and Coal Combustion Residuals (CCR) Impoundments at Steam Electric Power Plants*, Attachment A 1-2 (Jun. 7, 2010) [hereinafter Hanlon BPJ Memo]. Although this Memorandum discussed coal plant discharge limits, the statutory requirement to establish technology-based limits using BPJ is equally applicable across industries.

²¹ 33 U.S.C. §§ 1311(e) (requiring that effluent limits be applied to all point sources of discharge of pollutants); 1314(b) (EPA must revise such regulations, at least annually if appropriate). *See also* 33 U.S.C. § 1311(d) (requiring EPA to review, and if appropriate revise, BAT limits every five years). Effluent limitations include "any restriction established by a State or the Administrator on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources into navigable waters." 33 U.S.C. § 1362.

had revised the CAFO ELGs within the past seven years.²² In its 2015 Annual Review, EPA determined that the CAFO category was not an ELG priority and that ELG revisions are not warranted, and consequently did not propose any review of the CAFO ELGs in the 2016 draft Program Plan.²³ Yet the condition of America's waterways undeniably demonstrates that the current ELGs are not adequate. When EPA completes its 2016 Program Plan, the November 20, 2008 rule will have been in effect for more than seven years, and EPA must review and revise its CAFO NPDES regulations and ELGs without further delay.²⁴

B. FACTUAL BACKGROUND

The continued growth, consolidation, and increase in operational scale in the CAFO industry over the past several decades, along with growing evidence of the industry's widespread contamination of waterways, demonstrates that EPA's CAFO regulations are inadequate to control CAFO discharges to the extent required under the CWA. Due to the absence of adequate federal and state oversight, CAFOs have become a significant source of water pollution across the U.S.

a. Growth and Consolidation in Animal Production

Animal production has changed dramatically over the last several decades, with a strong trend toward larger facilities and regional concentration of livestock and poultry operations.²⁵ A majority of animals are now raised in confinement, and may be transferred between several industrial-scale facilities at different stages of their growth.²⁶ While the total number of livestock

²² EPA, Final 2014 Effluent Guidelines Program Plan Sec. 3.2.1, T. 3-1 ("In general, EPA removed an industrial point source category from further consideration during a review cycle if EPA established, revised, or reviewed the category's ELGs within seven years prior to the annual reviews") (July 2015), https://www.epa.gov/sites/production/files/2015-09/documents/final-2014-effluent-guidelines-program-plan_july-2015.pdf.

²³ EPA, Preliminary 2016 Effluent Guidelines Program Plan Sec. 10-1 (June 2016), https://www.epa.gov/sites/production/files/2016-06/documents/prelim-2016-eg-plan_june-2016.pdf. This determination is hard to reconcile with EPA's continued listing of CAFOs as one of its water "enforcement priorities," with the goals of using innovative monitoring and pollution control technologies to reduce CAFO water pollution impacts. See EPA, National Enforcement Initiative: Preventing Animal Waste from Contaminating Surface and Ground Water, <https://www.epa.gov/enforcement/national-enforcement-initiative-preventing-animal-waste-contaminating-surface-and-ground> (last visited Feb. 10, 2017).

²⁴ In fact, EPA has not undergone a comprehensive review of the CAFO regulations since 2003, when it proposed substantive changes to the CAFO regulations. Aside from affirmatively finding that the BCT limitations in the 2003 rule represent BCT for fecal coliform, the 2008 rule did not revisit the technology-based effluent limits for CAFO pollutants, nor did the minor amendments published without notice and comment in 2012.

²⁵ Claudia Copeland, *Animal Waste and Hazardous Substances: Current Laws and Legislative Issues*, CRS Report RL33691 1 (Nov. 8, 2011) [hereinafter *Animal Waste and Hazardous Substances*], <https://fas.org/sgp/crs/misc/RL33691.pdf>.

²⁶ EPA, *Literature Review of Contaminants in Livestock and Poultry Manure and Implications for Water Quality*, EPA 820-R-13-002 5 (July 2013) [hereinafter EPA Literature Review],

animals raised has grown, the number of farms has declined substantially.²⁷ In fact, since the 1950s the production of livestock and poultry in the U.S. has more than doubled, while the number of operations has decreased by 80%.²⁸ As a result of this growth, factory farm livestock produced an estimated thirteen times as much waste as the entire U.S. population in 2012.²⁹

CAFOs and entire livestock sectors are also increasingly concentrated in certain watersheds and areas of the country, which has increased water quality risks as waste production surpasses land available for disposal. The Government Accountability Office has analyzed this trend, finding that EPA's approach to CAFO regulation under the CWA has been under-protective of water quality, and has allowed CAFO manure generation to surpass cropland in some regions, leading to contamination of surface and ground waters in counties with insufficient cropland to agronomically utilize manure nutrients.³⁰ Reviewing this trend towards consolidation of manure nutrient production nationwide, the U.S. Department of Agriculture similarly found dramatic increases in manure nutrients relative to the ability of cropland to utilize them between 1982 and 1997.³¹

b. CAFO Water Pollution Impacts

Standard CAFO operation and waste disposal practices have led to widespread water pollution. Numerous studies identify agriculture as the nation's leading contributor to water quality impairments in rivers and lakes, with manure responsible for a significant share of that

<https://www.scribd.com/document/214717740/Literature-Review-of-Contaminants-in-Livestock-and-Poultry-Manure-and-Implications-for-Water-Quality>.

²⁷ *Id.* at 1. For example, the number of dairy farms fell by about 40% between 1999 and 2008, but during the same period, the number of dairy cows decreased by only 16%, while total milk production increased by 18%. John C. Becker & John H. Howard, *A Historical View of the Solutions Offered to Regulate Concentrate Animal Feeding Operations under the Clean Water Act: What Has Been Learned*, 3 Ky. J. Equine Agric. & Nat. Res. L. 71, 75 (2010). Similarly, between 1994 and 2001 the number of hog farms in the U.S. decreased by approximately 120,000 while the number of hogs remained relatively stable. Susan M. Brehm, *From Red Barn to Facility: Changing Environmental Liability to Fit the Changing Structure of Livestock Production*, 93 Cal. L. Rev. 797, 801 (2005). The poultry market peaked even earlier, with the number of broiler chicken farms dropping 35% between 1969 and 1992, while the number of chickens produced tripled. John Marks, *Regulating Agricultural Pollution in Georgia: Recent Trends and the Debate over Integrator Liability*, 18 Ga. State Univ. L. Rev. 1031, 1035 (2002).

²⁸ EPA Literature Review at 1.

²⁹ EPA, National Pollutant Discharge Elimination System (NPDES) Concentrated Animal Feeding Operation (CAFO) Reporting Rule, Proposed Rule, 76 Fed. Reg. 65431, 65433 (Oct. 21, 2011) [hereinafter Proposed CAFO Reporting Rule]; Food & Water Watch, *Factory Farm Nation 2015 Edition* 3 (2015) [hereinafter *Factory Farm Nation*], <http://www.foodandwaterwatch.org/sites/default/files/factory-farm-nation-report-may-2015.pdf>.

³⁰ GAO, *Concentrated Animal Feeding Operations: EPA Needs More Information and a Clearly Defined Strategy to Protect Air and Water Quality from Pollutants of Concern* 21-22 (2008), <http://www.gao.gov/assets/290/280229.pdf> [hereinafter GAO CAFO Report]. See also *Animal Waste and Hazardous Substances* at 1 (noting that in 1997 USDA estimated that 66,000 operations had nitrogen in excess of the "assimilative capacity of the soil," while 89,000 operations had a similar excess in phosphorous).

³¹ Robert L. Kellogg, et al., *Manure Nutrients Relative to the Capacity of Cropland and Pastureland to Assimilate Nutrients: Spatial and Temporal Trends for the U.S.*, USDA Pub. No. nps00-0579 75 (2000), http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_012133.pdf. This does not address other manure pollutants that are not agronomically valuable in any quantity.

pollution.³² Twenty–nine states have specifically identified AFOs as contributing to their water quality impairments,³³ and states with high concentrations of CAFOs “experience on average 20 to 30 serious water quality problems per year as a result of manure management problems.”³⁴ EPA has acknowledged that “[w]ater quality impacts from CAFOs may be due, in part, to inadequate compliance with existing regulations or to limitations in CAFO permitting programs.”³⁵

Surface water pollution from CAFOs occurs through two major pathways—production areas and land application fields. Spills, runoff, and other unintentional discharges may occur from numerous parts of a CAFO production area, such as manure lagoons, pits, or stockpiles, feed storage areas, livestock confinement ventilation fans, and mortality management areas. A number of factors, including poor facility design, equipment failure, operator error, and extreme weather events, lead to discharges. Operators may also cause releases intentionally if inadequate storage, poor planning, or rainfall accumulation results in overly full waste impoundments.³⁶

Surface water pollution from CAFO production areas in various livestock sectors is widespread and has impacted waterways across the country. Hundreds of documented overflows and catastrophic failures of manure storage systems have resulted in large discharges, which in turn have caused toxic stream conditions and large fish kills in numerous states, including Iowa, Wisconsin, Minnesota, Michigan, Missouri, Illinois, New York, Virginia, and North Carolina.³⁷ In addition, earthen lagoons, and even most lined lagoons, are not designed to retain all wastewater. These storage systems are designed to allow seepage and/or leaking of manure into groundwater, which can lead to jurisdictional discharges into nearby surface waters.³⁸ Even deep

³² David Osterberg and David Wallinga, *Addressing Externalities from Swine Production to Reduce Public Health & Environmental Impacts*, 94 Am. J. Pub. Health 1703, 1704 (Oct. 2004) (estimating that “[c]urrent farming practices are responsible for 70% of the pollution in the nation’s rivers and streams”); Claudia Copeland, *Air Quality Issues and Animal Agriculture—A Primer*, CRS Report RL32948 9 (Apr. 11, 2007) [hereinafter *Air Quality Primer*], <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/RL32948.pdf>.

³³ Proposed CAFO Reporting Rule, 76 Fed. Reg. at 65434, citing EPA, National Water Quality Inventory: Report to Congress—2004 Reporting Cycle, EPA–841–R–08–001 (Jan. 2009).

³⁴ Carrie Hribar, Nat’l Ass’n of Local Bds. of Health, *Understanding Concentrated Animal Feeding Operations and Their Impact on Communities* 4 (2010) [hereinafter *Understanding CAFOs and Their Impact on Communities*], http://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf.

³⁵ Proposed CAFO Reporting Rule, 76 Fed. Reg. at 65434.

³⁶ *Id.*

³⁷ See, e.g., EPA Literature Review at 49 (reviewing reported incidences of fish kills); Iowa DNR, Manure Discharge Chart, <http://www.iowadnr.gov/Environmental-Protection/Land-Quality/Animal-Feeding-Operations/EPA-DNR-Workplan-Materials> (last visited Feb. 10, 2017); David Jackson and Gary Marx, Chicago Tribune, Spills of Pig Waste Kill Hundreds of Thousands of Fish in Illinois (Aug. 5, 2016), <http://www.chicagotribune.com/news/watchdog/pork/ct-pig-farms-pollution-met-20160802-story.html>; Lee Bergquist and Kevin Crowe, Milwaukee Journal Sentinel, Manure Spills in 2013 the Highest in Seven Years Statewide (Dec. 5, 2013), <http://archive.jsonline.com/news/wisconsin/manure-spills-in-2013-the-highest-in-seven-years-statewide-b99157574z1-234701931.html>; Sara Peach, National Geographic, What to Do about Pig Poop? North Carolina Fights a Rising Tide (Oct. 30, 2014), <http://news.nationalgeographic.com/news/2014/10/141028-hog-farms-waste-pollution-methane-north-carolina-environment/>.

³⁸ See Natural Resources Conservation Service (NRCS), Conservation Practice Standard 359: Waste Treatment Lagoon (Jul. 2004), <https://efotg.sc.egov.usda.gov/references/public/AL/tg359.pdf>. See also, e.g., Animal Waste

pit systems that retain waste below confinement buildings, as are common in the hog industry, are reliant on pumping systems and are prone to structural and equipment failures that cause discharges to surface and groundwater.³⁹

CAFO discharges also occur due to waste application to cropland in excess of crop needs or under conditions that lead to runoff, such as on frozen, saturated, or sloped ground, or when crops are not in place to uptake nutrients. Many manure application fields also contain direct conduits to waterways, such as tile lines, ditches, grassed waterways, or sinkholes, and application practices do not always properly account for the need for setbacks from these features. As a result of application under any of these circumstances, precipitation, erosion, and other natural processes carry excess nutrients and other CAFO pollutants off of land application fields and into surface waters and conduits to surface waters. Collectively, these discharges are responsible for widespread degradation of U.S. waterways, and due to inadequate tracking and regulation, the full magnitude of their water pollution impacts remains unknown.

CAFO wastes contain numerous pollutants that pose substantial threats to human health and the environment. Specifically, these wastes include nitrogen, phosphorous, pathogens, salts, heavy metals, trace elements, antibiotics, pesticides, and hormones.⁴⁰ Pathogens associated with CAFO manure include *E. coli*, *Salmonella*, and *Giardia*,⁴¹ which endanger those who come into contact with contaminated water through swimming, boating, or other recreational activities. EPA has found that “[m]ore than 150 pathogens associated with industrial livestock production are also associated with risks to humans, including the six human pathogens that account for more than 90% of food and waterborne diseases.”⁴² Various pathogens in CAFO waste can cause symptoms such as diarrhea and an increased risk for severe illness or death.⁴³

Management Plan for Lost Valley Ranch Dairy App. A, discussing expected leakage rates from double lined lagoons, <http://www.oregon.gov/ODA/programs/NaturalResources/Pages/CAFO.aspx>. Although groundwater is not regulated as water of the United States, EPA has a longstanding position that point source discharges into groundwater that then discharge to surface waters via a “direct hydrological connection” are jurisdictional and subject to NPDES permitting requirements. National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitations Guidelines and Standards for Concentrated Animal Feeding Operations, Proposed Rule, 66 Fed. Reg. 2960, 3016 (Jan. 12, 2001) [hereinafter 2001 Proposed CAFO Rule].

³⁹ See, e.g., Iowa DNR, Manure Discharge Chart, <http://www.iowadnr.gov/Environmental-Protection/Land-Quality/Animal-Feeding-Operations/EPA-DNR-Workplan-Materials>.

⁴⁰ EPA Literature Review at 2. See also 2001 Proposed CAFO Rule, 66 Fed. Reg. at 2976-79; *Air Quality Primer* at 9; *Understanding CAFOs and Their Impact on Communities* 2-3 (Animal wastes contain a variety of pollutants, primarily nutrients, such as nitrogen and phosphorous, as well as organic matter, solids, pathogens such as *E. coli*, odorous/volatile compounds, growth hormones, antibiotics, chemicals used as additives to the manure or to clean equipment, silage leachate from corn feed, or copper sulfate used in footbaths for cows.); David Osterberg & David Wallinga, *Addressing Externalities from Swine Production to Reduce Public Health & Environmental Impacts*, 94 Am. J. Pub. Health at 1704.

⁴¹ Claudia Copeland, *Animal Waste and Water Quality: EPA Regulation of Concentrated Animal Feeding Operations (CAFOs)*, CRS Rep. RL31851 5 (Feb. 16, 2010) [hereinafter *Animal Waste and Water Quality*], <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/RL31851.pdf>.

⁴² 2003 CAFO Rule, 68 Fed. Reg. at 7236.

⁴³ *Understanding CAFOs and Their Impact on Communities* at 8-9.

Nutrients, primarily nitrogen and phosphorus, are also primary pollutants of concern in CAFO waste, due to their impacts on aquatic ecosystems and public health. Excess nitrogen and phosphorus lead to eutrophication of surface waters,⁴⁴ generate algal blooms that can produce toxins harmful to wild animals, aquatic life, and humans who come into contact with them,⁴⁵ and cause hypoxic “dead zones,” such as occur annually in the Gulf of Mexico and the Chesapeake Bay. EPA has recognized that “[n]utrient pollution is one of America’s most widespread, costly and challenging environmental problems.”⁴⁶

Antimicrobials, including medically important antibiotics, are also common constituents of CAFO waste, and have been detected in both surface and groundwater samples collected near CAFOs.⁴⁷ EPA has found that 80-90% of some administered antibiotics end up in animal waste.⁴⁸ While antibiotics are often used to promote the growth of livestock, as well as to fight disease in crowded, unsanitary CAFO environments, their use also promotes antibiotic-resistant infections in livestock and humans and the dissemination of antibiotic-resistant bacteria in waterways near CAFOs and their land application areas. The proliferation of antibiotic-resistant bacteria makes it more difficult to treat infections in humans, significantly increasing the likelihood of hospitalization and the average length of hospitalization in those who become infected.⁴⁹

EPA has previously found that heavy metals including “arsenic, cadmium, iron, lead, manganese, and nickel,” some of which are added to feed as micronutrients to promote animal growth, “are commonly found in CAFO manure, litter, and process wastewater.”⁵⁰ Just as with antibiotics fed to livestock, 80-90% of added arsenic, zinc, and copper are excreted in manure, and subsequent land application can lead to metal accumulation in soils and metal-contaminated runoff to waterways. When metal pollutants are present in CAFO discharges, they can damage aquatic ecosystems and cause a broad set of human health impacts.⁵¹ Researchers have found that the full impacts of metal pollution from CAFO waste, both alone and in combination with

⁴⁴ Shauna R. Collins, *Striking the Proper Balance Between the Carrot and the Stick Approaches to Animal Feeding Operation Regulation*, 2012 U. Ill. L. Rev. 923, 932 (2012).

⁴⁵ EPA Literature Review at 47.

⁴⁶ EPA, Nutrient Pollution: The Problem, <https://www.epa.gov/nutrientpollution/problem> (last visited Feb. 10, 2017).

⁴⁷ See, e.g., Joanne C. Chee-Sanford et al., *Fate and Transport of Antibiotic Residues and Antibiotic Resistance Genes following Land Application of Manure Waste*, 38 J. Env'tl. Quality 1086 (2009); Yi Luo et al., *Trends in Antibiotic Resistance Genes Occurrence in the Haihe River, China*, 44 Env'tl. Sci. Tech. 7220 (2010); Pew Commission on Industrial Farm Animal Production, *Putting Meat on the Table: Industrial Farm Animal Production in America* 15-16 (2008), <http://www.pewtrusts.org/~media/legacy/uploadedfiles/peg/publications/report/pcifapfinalpdf.pdf>.

⁴⁸ Proposed CAFO Reporting Rule, 76 Fed. Reg. at 65434.

⁴⁹ Shane Rogers & John Haines, *Detecting and Mitigating the Environmental Impact of Fecal Pathogens Originating from Confined Animal Feeding Operations: Review*, EPA/600/R-06/021 15 (Sept. 2005).

⁵⁰ Proposed CAFO Reporting Rule, 76 Fed. Reg. at 65434.

⁵¹ *Id.*

other contaminants, are inadequately understood.⁵²

CAFO wastes can also contain large quantities of hormones—both naturally produced and synthetic.⁵³ While acknowledging that hormone quantities are difficult to estimate due to the lack of reporting requirements, one study estimated that approximately 722,852 pounds of naturally-produced estrogens, androgens, and progestogens were excreted by cattle, swine, and poultry in 2000; accounting for all synthetic hormones in manure, the use of which does not have to be reported, would drive this figure even higher.⁵⁴ Hormones and their metabolites are also found in the environment surrounding livestock and poultry facilities, including streams, creeks, and surface waters downstream from beef cattle feedlots,⁵⁵ where they can cause serious damage to the endocrine and reproductive systems of aquatic species, lab rats, and human cells.⁵⁶

While CAFO pollution is widespread, it also disproportionately impacts environmental justice communities. Research to date has focused primarily on the hog industry, and several studies have shown that “a disproportionate number of swine CAFOs are located in low-income and nonwhite areas.”⁵⁷ One study analyzed the locations of large hog CAFOs in 17 states, including Iowa, North Carolina, and Minnesota, which are leaders in hog production where CAFOs had been rapidly expanding. In these three states, the researchers found disproportionate siting and expansion of large hog CAFOs in African American communities in the 1980s and 1990s, and concluded that as hog production shifts from small-scale to large-scale, racial inequity in CAFO siting intensifies.⁵⁸ A 2011 study of 16 North Carolina communities concluded that in general, “[i]ndustrial hog operations in North Carolina are disproportionately located in low-income communities of color.”⁵⁹

Although many studies have focused on the hog sector, these environmental justice impacts do extend to communities affected by other livestock sectors. EPA recently conducted its own limited analysis of CAFO location in relation to environmental justice populations of concern, and identified areas at risk of disproportional impacts from virtually every CAFO livestock sector: the Delmarva Peninsula, characterized by broiler chicken operations; the Iowa-Minnesota border, characterized by hog, egg layer, and beef feedlot operations; the Carolina

⁵² JoAnn Burkholder et al., *Impacts of Waste from Concentrated Animal Feeding Operations on Water Quality*, 115 *Envtl. Health Perspectives* 308, 308-309 (2007) [hereinafter *Impacts of Waste from Concentrated Animal Feeding Operations on Water Quality*], http://ir.uiowa.edu/cgi/viewcontent.cgi?article=1025&context=oe_h_pubs.

⁵³ EPA Literature Review at 40-41.

⁵⁴ *Id.*

⁵⁵ *Id.* at 45.

⁵⁶ GAO CAFO Report at 24.

⁵⁷ Kelley Donham, Steven Wing, et al., *Community Health and Socioeconomic Issues Surrounding Concentrated Animal Feeding Operations*, 115 *Envtl. Health Perspectives* 317, 318 (2007).

⁵⁸ Jeremy Arney, Janice E. Johnston, and Paul B. Stretesky, *Environmental Inequity: An Analysis of Large-Scale Hog Operations in 17 States, 1982-1997*, 68 *Rural Sociology* 231, 244 (2003).

⁵⁹ Schinasi, et al., *Air Pollution, Lung Function, and Physical Symptoms in Communities Near Concentrated Swine Feeding Operations*, 22 *Epidemiology* 7 (March 2011).

lowlands, characterized by hog, broiler, and turkey operations; and the California central valley, characterized by dairy operations. All of these regions have both large numbers of CAFOs and large minority and low-income populations.⁶⁰

Recognition of these environmental justice impacts is growing; the Department of Justice recently cited to the disproportionate impact of a Mississippi egg layer operation's water pollution on a low-income community in its 2015 Implementation Progress Report on Environmental Justice,⁶¹ and Maryland's Wicomico County Health Department was recently compelled to conduct a Health Impact Assessment for a proposed 10-house broiler operation in an 80% African American community.⁶² EPA's External Civil Rights Compliance Office also recently investigated North Carolina's swine permitting program and found "the possibility that African Americans, Latinos, and Native Americans have been subjected to discrimination as the result of [North Carolina Department of Environmental Quality's] operation of the [program] . . ."⁶³

CAFO pollution also poses a considerable threat to wildlife in the United States. Exposure to the contaminants discharged from these operations, including heavy metals, pharmaceuticals, and pesticides can harm or kill aquatic species. The fish kill events caused by some CAFO discharges, for example, harm not only these observable fish populations, but are also generally indicative of larger aquatic species losses. Relatedly, reproductive and endocrine disruption from exposure to pharmaceuticals in farm animal waste can result in the reduction and imbalance of impacted species' population numbers.⁶⁴ Pollution from CAFOs further harms wildlife and ecosystems through loss of ecosystem biodiversity, including through conversion and encroachment of essential species habitat.⁶⁵ These harms are particularly acute for endangered

⁶⁰ EPA Office of Water, National Pollutant Discharge Elimination System (NPDES) Concentrated Animal Feeding Operation (CAFO) Reporting Rule, Analysis under Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations 4 (Oct. 3, 2011).

⁶¹ U.S. Dep't of Justice, 2015 Implementation Progress Report on Environmental Justice 23, <https://www.justice.gov/ej/file/870526/download>.

⁶² Wicomico County Health Dep't, Health Impact Assessment: Proposed Concentrated Animal Feeding Operation in Wicomico County (Apr. 2016), <https://www.wicomicohealth.org/file/0/0/Health%20Impact%20Assessment.pdf>.

⁶³ Letter of Concern from Lilian S. Dorka, Director, EPA External Civil Rights Compliance Office to William G. Ross, Jr., Acting Sec'y, N.C. Dep't of Env'tl. Quality 1 (Jan. 12, 2017), <http://blogs.law.unc.edu/documents/civilrights/epalettertodeq011217.pdf>.

⁶⁴ 2001 Proposed CAFO Rule, 66 Fed. Reg. at 2981; Food and Agriculture Organization of the United Nations, *Livestock's Long Shadow*, 209-11 (2008); World Health Organization and United Nations Environmental Programme, *State of the Science of Endocrine Disrupting Chemicals – 2012* vii - xv (2013), <http://www.who.int/ceh/publications/endocrine/en/>; see also J.K. Leet, et al., *Environmental hormones and their impacts on sex differentiation in fathead minnows*, 158 *Aquatic Toxicology* 98, 98 (2015), https://www.researchgate.net/publication/267870556_Environmental_Hormones_and_Their_Impacts_on_Sex_Differentiation_in_Fathead_Minnows; Ripley, et al., *Utilization of protein expression profiles as indicators of environmental impairment of smallmouth bass (Micropterus dolomieu) from the Shenandoah River, Virginia, USA*, 27 *Env'tl. Toxicology and Chemistry* 1756, 1756 (2008).

⁶⁵ USDA, *Agricultural Waste Management Field Handbook*, Agricultural Wastes, Air, and Animal Resources 3-3 (2012), <http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=31441.wba> ("Adding wastes to a stream can lower oxygen levels to such an extent that fish and other aquatic life are forced to migrate from the polluted area or die for lack of oxygen."); FWS, *Endangered and Threatened Wildlife and Plants; Final Rule to List*

and threatened species, where prolonged insecurity or heightened pollution exposure can result in the extirpation and, potentially, extinction of impacted species.⁶⁶

Widespread CAFO water pollution is significantly damaging public health and ecosystems, and although the full extent of this pollution is unknown due to the lack of CAFO permitting and water pollution monitoring, there is overwhelming evidence of EPA's failure to live up to its CWA mandate. The contamination, both expressly authorized and simply overlooked, under EPA's current regulatory approach poses a direct threat to water quality, aquatic ecosystems, and human health. It is therefore incumbent upon EPA to promulgate revised CAFO rules that more effectively confront the environmental and public health risks posed by water pollution from these facilities.

c. Inadequate CAFO Regulation under the Clean Water Act

After more than 40 years of CWA implementation, EPA has acknowledged that it still lacks basic information about where the nation's CAFOs are located and which facilities are discharging pollutants into jurisdictional waterways without required permits.⁶⁷ EPA estimates that only approximately 40% of CAFOs are currently regulated under the NPDES program,⁶⁸ while as many as 75% discharge as a result of their "standard operational profiles."⁶⁹ Despite these major gaps in information and regulation, EPA proved unwilling to stand up to CAFO industry pressure when it abandoned the only nationwide effort it has undertaken in decades to fill these gaps by developing a comprehensive inventory of CAFOs.⁷⁰

This failure by EPA to develop or maintain a CAFO inventory has meant that states must identify CAFOs and determine which are subject to regulation with little guidance or oversight from EPA. Predictably, this has resulted in a patchwork of state programs, inconsistent amounts

the Topeka Shiner as Endangered, 63 Fed. Reg. 69016, 69017 (Dec. 15, 1998) (For endangered Topeka Shiner populations, "[t]he action most likely impacting the species to the greatest degree in the past is sedimentation and eutrophication . . . resulting from intensive agricultural development Feedlot operations on or near streams are also known to impact prairie fishes due to organic input resulting in eutrophication."); Blehert, et al., USGS, Investigation of Bacterial Pathogens Associated with Concentrated Animal Feeding Operations (CAFOs) and their Potential Impacts on a National Wildlife Refuge in Oklahoma: Final Report, Project 2N44, 200120004 2 (July 24, 2004).

⁶⁶ See, e.g., FWS, CAFOs Feed a Growing Problem, Endangered Species Bulletin, Vol. XXIV No. 1 (January/February 1999), <http://www.thefreelibrary.com/CAFOs+Feed+a+Growing+Problem.-a054466913> (In 1998, an 11 million gallon spill of liquid waste from a large poultry operation damaged a wetland vernal pool system in the Merced National Wildlife Refuge, killing endangered vernal pool fairy shrimp and vernal pool tadpole shrimp.).

⁶⁷ Proposed CAFO Reporting Rule, 76 Fed. Reg. at 65436.

⁶⁸ In 2010, EPA estimated that approximately forty percent of an estimated 19,200 CAFOs were covered by NPDES permits. EPA, National Pollutant Discharge Elimination System (NPDES) Information Collection Rulemaking and CAFOs 1 (Sept. 2010) [hereinafter EPA 2010 NPDES Estimate].

⁶⁹ *Id.*

⁷⁰ National Pollutant Discharge Elimination System (NPDES) Concentrated Animal Feeding Operation (CAFO) Reporting Rule, Withdrawal, 77 Fed. Reg. 42679 (Jul. 20, 2012).

and qualities of available information, and widely varying approaches to NPDES permitting. For example, Michigan requires all CAFOs with the potential to discharge to obtain a NPDES permit, and this requirement has been upheld by the state's court of appeals.⁷¹ Wisconsin generally requires all Large CAFOs to obtain NPDES permits,⁷² while Iowa has refused to issue a single permit to any of its thousands of confinement operations, despite hundreds of documented discharges.⁷³ In South Dakota, the state has proposed to allow CAFO operators to choose whether to apply for a NPDES permit or a state no-discharge permit.⁷⁴ And Delaware regulations purportedly require all CAFOs that propose to discharge to obtain permits, but the state had only recently begun granting its first CAFO NPDES permits (general permit coverage for broiler chicken operations that land-apply) at the date of this petition's filing.⁷⁵

EPA has not prioritized permitting, even where CAFOs have had documented discharges. In its 2008 CAFO Rule preamble and a memo issued by EPA's James Hanlon in response to the *Pork Producers* decision, EPA improperly conflates the legal question of whether a violation is ongoing for purposes of establishing jurisdiction to maintain a CWA citizen suit with the distinct question of whether a facility is a point source discharger subject to NPDES permitting requirements.⁷⁶ Based on this flawed analysis, even CAFOs with documented jurisdictional discharges are often not required, or even encouraged, to obtain NPDES permits, because they can claim to have "permanently remedied" the cause of their violations. This loophole is ripe for abuse, and as we can see in the case of Iowa, where *no* confinements with known discharges have obtained permits, such abuse is rampant.

For these reasons, as well as the additional deficiencies in EPA's approach explained throughout this petition, EPA and states have never come close to satisfying the CWA's obligations to permit discharging CAFOs and exercise proper oversight. EPA remains apparently ignorant of the fact that its regulations on paper have not translated to effective regulation in the real world. For example, Allison Wiedeman of the EPA's Water Permits Division was quoted in early 2016 as saying, in describing the current state of CAFO CWA permitting, "[w]e see that it's working. We know that these facilities have to have permits if they discharge, and so all I can

⁷¹ See *Mich. Farm Bureau et al. v. Mich. Dep't of Env'tl. Quality*, 292 Mich. App. 106, 108 (Mar. 29, 2011).

⁷² Wis. Admin. Code Ch. NR 243.11 (2015).

⁷³ See Iowa Dep't of Nat. Res., 2016 Annual Report for Work Plan Agreement Between the Iowa Department of Natural Resources and the Environmental Protection Agency Region 7 (Aug. 1, 2016), <http://www.iowadnr.gov/Environmental-Protection/Land-Quality/Animal-Feeding-Operations/EPA-DNR-Workplan-Materials>.

⁷⁴ S.D. Dep't of Env't and Natural Res., Draft General Water Pollution Control Permit for CAFOs (Oct. 2015), <http://denr.sd.gov/des/fp/publicnotices/DraftGeneralPermitPN.pdf>.

⁷⁵ See DNREC, Division of Water, Concentrated Animal Feeding Operations, <http://www.dnrec.delaware.gov/wr/Information/Pages/CAFO.aspx> (last visited Jan. 30, 2017).

⁷⁶ 2008 CAFO Rule, 73 Fed. Reg. at 70423; James A. Hanlon, Director, EPA Office of Wastewater Management, *Concentrated Animal Feeding Program Update after National Pork Producers Council v. EPA* (Dec. 8, 2011) (both exclusively citing CWA citizen suit case law).

tell you right now is that the process is working.”⁷⁷ This head-in-the-sand approach does not protect communities from illegal CAFO pollution.

C. SUMMARY OF RELIEF REQUESTED

Petitioners request that EPA promulgate new CAFO rules that will effectively implement the CWA’s pollution control mandate. Specifically, Petitioners request the following relief:

1. EPA should establish an evidentiary presumption that certain CAFOs discharge and are either subject to NPDES permitting or must rebut the presumption by demonstrating they do not discharge;
2. EPA should revise its interpretation of the agricultural stormwater exemption such that no discharges resulting from CAFO activities are exempt as non-point source pollution;
3. EPA must ensure that integrators who meet the CWA definition of owner or operator are co-permitted with contract producers, as the statute has always required;
4. EPA should revise certain definitions in the CAFO regulations;
5. EPA should revise the requirements applicable to all CAFOs, including by requiring water quality monitoring in CAFO NPDES permits to ensure compliance with the CWA and permit terms; and
6. EPA should revise the CAFO ELGs to address additional CAFO pollutants of concern, prohibit practices known to harm water quality, and otherwise strengthen existing requirements.

Petitioners further request that EPA open a docket for this petition and solicit public input on the proposed rule changes.

II. ARGUMENT

EPA’s current CAFO regulations are failing to achieve the mandates of the CWA to permit point source dischargers of pollution, require pollution reductions based on appropriate technology-based standards, and ultimately eliminate point source discharges to navigable waters.⁷⁸ To meet these mandates, EPA must make certain critical changes to its CAFO regulations.

⁷⁷ Keri Brown, Nat’l Public Radio, When a Chicken Farm Moves Next Door, Odor May Not Be The Only Problem (Jan. 24, 2016), <http://www.npr.org/sections/thesalt/2016/01/24/463976110/when-a-chicken-farm-moves-next-door-odor-may-not-be-the-only-problem>. Even more recently, former EPA Administrator Gina McCarthy expressed her view that cleaning up agricultural pollution is largely up to voluntary industry practices and the USDA, because EPA is not “in a position to demand it of them.” Jenny Hopkinson, Politico Pro Agriculture Whiteboard, EPA’s McCarthy: Better That USDA Tell Farmers to Up Their Environmental Game (Oct. 18, 2016).

⁷⁸ See 33 U.S.C. § 1251(a)(1).

This petition lays out a roadmap for necessary and effective changes EPA must make to its CAFO regulations, addressing the two overarching issues of permit coverage and permit effectiveness. As detailed herein, EPA’s existing authority enables it to put a regulatory scheme in place that would ensure all CAFO dischargers are subject to NPDES permits and that those permits adequately limit CAFO discharges and protect water quality. Any action that falls short of achieving these fundamental requirements of the Act would be arbitrary and capricious.

A. EPA’S CAFO REGULATIONS MUST ENSURE THAT ALL DISCHARGING CAFOs OBTAIN NPDES PERMITS

The CWA prohibits the “discharge of a pollutant” by any person from any point source, unless in compliance with a NPDES permit.⁷⁹ Nonetheless, as discussed *supra*, EPA’s CAFO regulations have failed for decades to reliably bring discharging CAFOs into the NPDES permitting program. Furthermore, the incentive for a majority of CAFOs to seek coverage was diminished by the Fifth Circuit’s holding in *National Pork Producers Council v. EPA*, which invalidated the “duty to apply” for a NPDES permit under the 2008 CAFO rules.⁸⁰ The lack of a duty to apply has made it difficult for EPA and states to determine whether CAFOs are discharging and to ensure that all CAFO polluters obtain permits.⁸¹

This general lack of oversight, along with specific regulatory deficiencies, has allowed polluting facilities to evade permitting requirements for decades. The common-sense amendments to EPA’s regulatory approach discussed below would close the loopholes that have allowed so many of these point sources to remain unregulated.

a. EPA Should Establish an Evidentiary Presumption that CAFOs with Certain Characteristics Actually Discharge

The overall lack of complete information about the universe of discharging CAFOs, and the persistent and widespread failures by states and EPA to issue CAFO permits to discharging facilities, demonstrates that EPA’s current regulations are simply not resulting in permits when required by the CWA. Therefore, in order to create an effective permitting system, EPA must require all CAFOs with certain characteristics—including but not limited to those that have had a documented discharge to a water of the U.S.—to obtain NPDES permits. To do so in a way that is consistent with recent case law, EPA must establish a presumption that certain operations actually discharge, as opposed to having the potential to discharge or proposing to discharge. EPA has clear authority to establish such a presumption, and abundant evidence with which to support it.

⁷⁹ 33 U.S.C. § 1311(a).

⁸⁰ See *Nat’l Pork Producers Council v. EPA*, 635 F.3d 738, 751 (5th Cir. 2011).

⁸¹ GAO CAFO Report at 17-18 (concluding that data collected by EPA and states on the number of CAFOs, discharge status of CAFOs, and number of permits issued by state authorities are unreliable).

i. EPA Has Clear Authority to Establish a Presumption that Certain CAFOs Discharge

Recent judicial decisions have undermined EPA's previous efforts to require polluting CAFOs to obtain NPDES permits. In *Waterkeeper Alliance v. EPA*, the Second Circuit vacated the requirement for each large CAFO to apply for a permit, or to secure a determination from the relevant permitting authority that that CAFO has "'no potential to discharge' manure, litter or process wastewater."⁸² The court held that this requirement exceeded EPA's statutory jurisdiction under the Act because "unless there is a 'discharge of any pollutant,' there is no violation of the Act, and point sources are . . . [not] statutorily obligated to seek or obtain an NPDES permit."⁸³ The Fifth Circuit echoed this holding in *National Pork Producers Council v. EPA*,⁸⁴ vacating a similar requirement that CAFOs that "proposed to discharge" must apply for permits. The practical result of these cases and EPA's interpretation of them has been to place the burden on citizens and regulators to identify discharging CAFOs that require permits *and* demonstrate that discharges are likely to recur—a 'catch me if you can' system that has resulted in widespread failure to require permits at the state level.⁸⁵

However, these decisions do not foreclose further action by EPA. While EPA's authority to require NPDES permits is limited to those CAFOs that actually discharge, the Second Circuit noted, in a footnote to the *Waterkeeper* decision, that EPA had not argued that the administrative record in that case "support[ed] a regulatory presumption to the effect that Large CAFOs *actually* discharge."⁸⁶ As such, the court did not consider whether EPA "might properly presume that Large CAFOs—or some subset thereof—actually discharge."⁸⁷ The court thus suggested that EPA may be able to marshal evidence to support a regulatory presumption that all or certain categories of CAFOs discharge.⁸⁸

Under well-settled principles of administrative law, agencies have the power to establish evidentiary presumptions.⁸⁹ EPA recognized this authority when it proposed establishing a

⁸² *Waterkeeper Alliance v. EPA*, 399 F.3d 486, 506 (2d Cir. 2005).

⁸³ *Id.* at 504.

⁸⁴ *Nat'l Pork Producers Council*, 635 F.3d at 750-51.

⁸⁵ As discussed *supra*, even when facilities experience documented discharges, some states allow operators to "remedy" the cause of the violation rather than apply for NPDES permits.

⁸⁶ *Waterkeeper Alliance*, 399 F.3d at 506 n.22.

⁸⁷ *Id.* (citing *NLRB v. Curtin Matheson Scientific, Inc.*, 494 U.S. 775 (1990); *Nat'l Mining Ass'n v. Babbitt*, 172 F.3d 906 (D.C. Cir. 1999)).

⁸⁸ In the subsequent *Nat'l Pork Producers Council* case, EPA did not argue that it had established such a presumption in the 2008 CAFO rulemaking; indeed, it argued the opposite. See Final Brief of Respondent U.S. EPA at 62, *Nat'l Pork Producers Council*, 635 F.3d 738 (argument heading: "Nothing in 40 C.F.R. § 122.23(j) Alters the Evidentiary Burden for a CAFO Alleged to Have Discharged Without a Permit"). The court therefore offered no opinion on whether an evidentiary presumption could be properly invoked to shift the burden of producing evidence of no-discharge to the regulated entity.

⁸⁹ See e.g., *NLRB v. Baptist Hospital*, 442 U.S. 773, 787 (1979); *Nat'l Mining Ass'n v. U.S. Dept. of Interior*, 177 F.3d 1, 6 (D.C. Cir. 1999); *U.S. Steel Corp. v. Astrue*, 495 F.3d 1272, 1284 (11th Cir. 2007); *Cole v. USDA*, 33 F.3d

rebuttable presumption that CAFO lagoons discharge to surface water via groundwater, suggesting a requirement that CAFOs either conduct groundwater pollution monitoring or rebut the presumption of discharge by providing a hydrologist's report demonstrating that no such connection exists at a facility.⁹⁰ A court will deem such an evidentiary presumption valid so long as there is "some rational connection between the fact proved and the ultimate fact presumed, and [] the inference of one fact from proof of another [is] not so unreasonable as to be a purely arbitrary mandate."⁹¹ Regulatory presumptions, i.e., evidentiary presumptions established through rulemaking, are therefore entitled to substantial deference.⁹² It follows that, by establishing an evidentiary presumption that certain CAFOs actually discharge, EPA can validly either treat them as discharging facilities or require them to produce evidence that they do not discharge, and therefore should not be subject to the NPDES program.⁹³ Moreover, case law strongly supports the use of this kind of legal device to increase administrative efficiency, and as a solution to the paucity of reported data pertaining to individual facilities.⁹⁴

ii. EPA Has Sufficient Evidence to Support a Presumption that CAFOs with Certain Characteristics Discharge

In this case, there is overwhelming evidence that many CAFOs actually discharge, so an evidentiary presumption to that effect is appropriate and necessary. EPA's own data already reflect much more than the "rational connection" between the design, construction, and operation of many CAFOs, and their actual discharges, that would be needed to uphold such a

1263, 1267 (11th Cir. 1994); *Holland Livestock Ranch v. U.S.*, 714 F.2d 90, 92 (9th Cir. 1983); *Chem. Mfrs. Ass'n v. Dep't of Transp.*, 105 F.3d 702, 705 (D.C. Cir. 1997).

⁹⁰ 2001 Proposed CAFO Rule, 66 Fed. Reg. at 3040.

⁹¹ *Mobile, Jackson & Kansas City R. Co. v. Turnipseed*, 219 U.S. 35, 43 (1910); *See also NLRB v. Baptist Hospital*, 442 U.S. at 787; *Atchison, T. & S. F. Ry. Co. v. ICC*, 580 F.2d 623, 629 (D.C. Cir. 1978); *Nat'l Mining Ass'n v. Babbitt*, 172 F.3d at 912. That the fact presumed does not always and inevitably follow from the predicate fact has no bearing on the validity of an evidentiary presumption. *See Cole v. USDA*, 33 F.3d at 1270 ("The mere statement that the fact presumed does not *always follow necessarily* from the predicate fact obviously leaves ample room for some lesser, though still rational, connection between the two," thus the mere possibility of circumstances in which the relationship might not hold true was insufficient to invalidate a regulatory presumption).

⁹² *NLRB v. Baptist Hospital*, 442 U.S. at 796 (Justice Brennan concurring); *NLRB v. Los Angeles New Hospital*, 640 F.2d 1017, 1020 (9th Cir. 1981); *N.Y. Foreign Freight Forwarders & Brokers Ass'n v. Fed. Mar. Comm'n*, 337 F.2d 289, 295 (2d Cir. 1964).

⁹³ The effect of an evidentiary presumption is to shift the burden of proof, but not the burden of persuasion, to the party against whom the presumption is invoked. *See Fed. R. Evid.* 301 ("In a civil case, unless a federal statute or those rules provide otherwise, the party against whom a presumption is directed has the burden of producing evidence to rebut the presumption. But this rule does not shift the burden of persuasion, which remains on the party who had it originally.").

⁹⁴ *Chem. Mfrs. Ass'n v. Dep't of Transp.*, 105 F.3d at 706 (upholding an evidentiary presumption, established by rule, as an exercise of the agency's "reasoned judgment," and a "sensible, timesaving device"); *Nat'l Mining Ass'n v. Babbitt*, 172 F.3d at 912 (finding an evidentiary presumption is permissible "when proof of one fact renders the existence of another fact so probable that it is sensible and timesaving to assume the truth [of the inferred fact] . . . until the adversary disproves it"). *See also* 2003 CAFO Rule, 68 Fed. Reg. at 7201 ("It is [] much easier for CAFOs to avoid permitting by not reporting their discharges [than it is for operations in other industries]. EPA continues to believe that imposing a duty to apply for all CAFOs is appropriate given that the current regulatory requirements are being misinterpreted or ignored.").

presumption. Two sets of factors are closely correlated with a CAFO's tendency to discharge, and should inform the creation of one or more evidentiary presumptions. First, even under EPA's untenably broad construction of the agricultural stormwater exemption, CAFOs that apply manure to land as fertilizer should be presumed to discharge, because nutrient management tools are simply not calculated to eliminate discharges, even if optimally designed and perfectly implemented, and should be assumed to result in discharges to surface waters and groundwater with a direct hydrologic connection to surface waters.⁹⁵ Second, CAFOs with certain production area characteristics that inevitably cause discharges—such as ditches and conduits that flow to jurisdictional waters, barns that spew pollutants from ventilation systems, or certain types of waste storage structures—should also be presumed to discharge. EPA has already done much of the analysis needed to support a presumption related to facilities with certain production area characteristics, and has concluded that 75% of CAFOs do in fact discharge based on their “standard operational profiles.”⁹⁶

1. Land Application Discharges

Land application of manure through spreading, spraying, injection, or incorporation is one of the most common methods of disposal of CAFO waste.⁹⁷ Yet EPA's current regulations effectively assume that dry weather land application in accordance with a nutrient management plan (NMP) will result in zero discharge, such that no permit is required. Although the regulations do not expressly state that land application in accordance with an NMP renders a permit unnecessary, the NMP is ostensibly designed to “ensure appropriate agricultural utilization of the nutrients”⁹⁸ As a result, many large CAFOs elect not to obtain permits based on reliance on an NMP.⁹⁹ Land application of waste is likely the leading source of CAFO water pollution and must be more effectively addressed through NPDES permitting.

As explained in more detail *infra*, EPA's primary assumption that land application does not result in discharges, absent a precipitation event, is fundamentally at odds with scientific

⁹⁵ See discussion *infra* Section II.A.b., asserting that such land application discharges should never be exempt from the definition of a point source discharge.

⁹⁶ EPA 2010 NPDES Estimate at 1. EPA should also presume that facilities that have experienced one or more documented discharges do in fact discharge, and must obtain permits. The current regulatory scheme defies logic by in effect presuming that a facility with a record of unpermitted pollution will never pollute again, and does not require operators to make any affirmative showing that they have made all necessary modifications to the facility to cease all continuous or sporadic discharges.

⁹⁷ *Understanding CAFOs and Their Impact on Communities* at 2.

⁹⁸ 40 C.F.R. § 122.23(e).

⁹⁹ In Iowa, for example, thousands of large confinement hog CAFOs apply waste according to state “manure management plans,” but at the time of filing, not a single one had been issued a NPDES permit. Due to the CAFO rules' limitations, even increased EPA oversight of Iowa's NPDES program, in part resulting from EPA's findings that the Iowa Department of Natural Resources fails to issue permits to CAFOs when necessary, has not compelled permitting of confinement operations. See Iowa Dep't Natural Res., EPA/DNR Work Plan Materials, <http://www.iowadnr.gov/Environmental-Protection/Land-Quality/Animal-Feeding-Operations/EPA-DNR-Workplan-Materials>.

research. Despite the legal fiction implied in EPA's rules, NMPs are not designed as zero discharge plans, either for nutrients or for other CAFO waste pollutants.¹⁰⁰ Numerous studies have recognized that runoff and leaching of contaminants from animal waste occurs even where it is applied at recommended application rates.¹⁰¹ Because land application practices result in actual discharges, EPA has strong grounds on which to presume that all land-applying CAFOs discharge and have a duty to apply for NPDES permits.¹⁰²

EPA's CAFO effluent guidelines do acknowledge that NMPs are not truly zero discharge, by requiring that *permitted* CAFOs' NMPs "minimiz[e]" nutrient runoff to surface waters.¹⁰³ Yet the current rules inexplicably allow Large CAFOs to land apply *without* NPDES permits, in effect assuming that these CAFOs' NMPs are even better and will result in *zero* dry weather discharge. This inherently contradictory scheme fails to protect waterways and has led to far less permitting than the CWA requires. The evidence clearly supports—and in fact dictates—a determination that all CAFOs that land apply waste discharge and require NPDES permits.¹⁰⁴

2. Production Area Characteristics

Similarly, EPA should presume that CAFOs with certain production area characteristics actually discharge. The production area of a CAFO generally includes, but is not limited to, the animal confinement, raw materials storage, mortalities management, and waste containment areas.¹⁰⁵ Numerous studies and EPA guidance documents recognize that facilities with certain characteristics are associated with discharges to surface waters.

After promulgating the 2008 CAFO Rule, EPA published a guidance document identifying certain features of CAFO production areas, both manmade and beyond the operator's

¹⁰⁰ See *infra* Section II.B.b.iii.

¹⁰¹ *Impacts of Waste from Concentrated Animal Feeding Operations on Water Quality* at 308 (surveying literature that found high concentrations of nitrogen in surface waters adjacent to sprayfields where animal waste was applied at recommended rates); see also L.M. Risse, et al., *Land Application of Manure for Beneficial Reuse*, National Center for Manure and Animal Waste Management White Papers iii (2001), <https://www.ars.usda.gov/ARUserFiles/66120900/SoilManagementAndCarbonSequestration/2001ajfb02.pdf> ("Even under ideal conditions, there is still a significant risk of losses to the environment. Agricultural systems leak and elimination of non-point source impacts is practically impossible.").

¹⁰² This petition also requests that EPA strengthen its requirements for land application practices to better protect water quality. However, these two proposals are not in the alternative; because even the requested improvements to the land application regulations would still not eliminate resulting discharges, the presumption of discharge is appropriate and necessary for all CAFOs that land apply, even assuming significantly more stringent nutrient management requirements.

¹⁰³ 40 C.F.R. § 412.4(c).

¹⁰⁴ The regulations' failure to account for most non-nutrient pollutants underscores the fact that NMPs are not zero discharge plans. EPA should make further regulatory revisions regarding the agricultural stormwater exemption and the CAFO definitions, as discussed *infra*, to enable it to also require NPDES permits for wet-weather CAFO land application discharges and Medium AFOs that land apply, via establishment of similar presumptions.

¹⁰⁵ 40 C.F.R. § 122.23(b)(8).

control, which support a presumption of discharge.¹⁰⁶ These include: proximity of the CAFO to jurisdictional waters, and whether the CAFO is upslope from such waters; climatic conditions, including whether precipitation exceeds evaporation; type of waste storage system, and the capacity, quality of construction, and presence and extent of built-in safeguards of the storage system; drainage of the production area; and exposure of animal waste and feed to precipitation or other water.¹⁰⁷ As noted previously, EPA has enough information to assess what aspects of CAFO operations are resulting in discharges, and has already used this information to estimate that up to 75% of CAFOs do in fact discharge as a result of their “standard operational profiles;”¹⁰⁸ it therefore can and should re-evaluate these factors in light of available discharge data and establish a list of criteria related to the production area for which it will establish a presumption of discharge.

Ventilation systems also lead to surface water discharges.¹⁰⁹ Chicken house ventilation fans, for example, constantly and intentionally release pollutants such as ammonia, manure, dust, feathers, and feed,¹¹⁰ and often these pollutants are not kept out of waterways. Many CAFOs are “designed to channel precipitation runoff from the areas around the houses away from the confinement area.”¹¹¹ At such facilities, contaminants vented from poultry houses will deposit in ditches or waterways that traverse or border production areas.¹¹² Facilities can also discharge

¹⁰⁶ EPA, *Implementation Guidance on CAFO Regulations—CAFOs that Discharge or Are Proposing to Discharge* (May 28, 2010), http://www.epa.gov/npdes/pubs/cafo_implementation_guidance.pdf [hereinafter CAFOs that Discharge Guidance].

¹⁰⁷ *Id.* at 2. EPA identified additional factors specific to the production area that determine whether a CAFO will discharge, including:

- (1) Whether there are structural controls in place to divert clean water and what condition they are in;
- (2) Inspection and maintenance schedules for clean water diversion controls, such as berms, gutters, and channels;
- (3) Whether design and maintenance of pipes, valves, ditches, drains, etc. associated with the collection of manure and wastewater from the animal confinement area prevents spills and leakage;
- (4) Whether any secondary containment to manage contaminated runoff is designed, operated and maintained to handle all pollutant loads; and
- (5) Whether the animal confinement area prevents animals from having direct contact with waters of the U.S.

Id. at 5.

¹⁰⁸ EPA 2010 NPDES Estimate at 1.

¹⁰⁹ EPA guidance indicates that a number of factors contribute to the likelihood that a ventilated confinement house system will discharge, including the way water is drained from the site and proximity to jurisdictional waters. CAFOs that Discharge Guidance at 13.

¹¹⁰ *Understanding CAFOs and Their Impact on Communities* at 5.

¹¹¹ CAFOs that Discharge Guidance at 13.

¹¹² See EPA, NPDES Permit Writers’ Manual for Concentrated Animal Feeding Operations, EPA 833-F-2-001 4-18 (2012) [hereinafter Permit Writers’ Manual] (noting that pollutants including manure, feathers, and feed fall to the ground immediately downward from confinement building exhaust ducts and ventilation fans and “are carried by precipitation-related or other runoff to waters of the U.S.”); see also *Nat’l Cotton Council v. EPA*, 553 F.3d 927, 939-40 (6th Cir. 2009), finding that pesticide pollutants deposited into waterways after their release from a point source, similar to ventilated ammonia emissions that deposit in waterways, are subject to NPDES permitting requirements.

directly via deposition of ventilated pollutants into waterways. A North Carolina trial court has recognized that this constitutes a jurisdictional discharge, finding that ammonia and other pollutants that reach jurisdictional waters after being expelled by ventilation fans are subject to NPDES permitting requirements.¹¹³ EPA should presume that both CAFOs in close proximity to waterways or conduits to waterways that fail to capture ventilated pollutants, as well as CAFOs designed to channel precipitation and production area pollutants off of the facility into ditches and waterways, do in fact discharge.

These findings with respect to land application practices and specific production area characteristics reflect a larger body of evidence that demonstrates that CAFOs with certain practices and characteristics are not only prone to discharge, but they do *in fact* discharge. EPA should use its technical expertise and available research to identify the full suite of practices and characteristics that support presumptions that certain CAFOs discharge in fact, and adopt presumptions based on these determinations. Because the evidence demonstrates that many CAFOs actually discharge pollutants, as opposed to merely having the potential to discharge or proposing to discharge, EPA has clear authority to establish an evidentiary presumption to that effect, notwithstanding the decisions of the Second and Fifth Circuits on previous CAFO rulemakings.

iii. Establishing a Presumption that Certain CAFOs Discharge is Necessary to Achieve the Purposes of the Act

The stated objective of the CWA is not merely to reduce, but to eliminate pollution discharges to navigable waters.¹¹⁴ Yet the current regime essentially allows CAFOs to determine for themselves whether they are subject to regulation, an approach that has resulted in wildly inconsistent and inadequate permitting at the state level, along with widespread unregulated pollution from CAFOs.¹¹⁵ Moreover, this scheme's 'zero discharge' fiction discourages states from establishing water quality based effluent limitations (WQBELs) for CAFO discharges into impaired waters, which further hinders proper implementation of the Act and undermines its mandate to achieve compliance with water quality standards. A rebuttable presumption that certain CAFOs discharge is necessary to mitigate these failings and meet EPA's obligations under the CWA.

Under EPA's current approach, the majority of CAFOs are responsible for determining for themselves whether they discharge or are exempt from permitting requirements. But EPA has

¹¹³ *Rose Acre Farms, Inc. v. N.C. Dep't of Env't and Natural Res.*, No. 12-CVS-10 ¶¶ 54, 55 (Jan. 4, 2013).

¹¹⁴ 33 U.S.C. § 1251(a)(1).

¹¹⁵ See, e.g., T.J. Centner, *Challenging NPDES Permits Granted without Public Participation*, 38 Boston Coll. Envtl. Aff. L. Rev. 1, 8 (2011) (noting that regulation of unpermitted CAFOs under state law "has been unsuccessful"); Jillian P. Fry, et al., *Investigating the Role of State Permitting and Agriculture Agencies in Addressing Public Health Concerns Related to Industrial Food Animal Production*, 9 PLOS 1 2 (2014), <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0089870>.

acknowledged that CAFO operators will not voluntarily subject themselves to regulations, and will therefore not apply for CAFO permits if they are not required to do so.¹¹⁶ In the preamble to the 2001 proposed CAFO rule, EPA noted that only about 2,500 of the 12,000 CAFOs that should have applied for permits at the time had done so.¹¹⁷ Based on the continued CAFO–related impairment of neighboring watersheds, EPA concluded that many of these large facilities were “actually discharging” and should have applied for a permit.¹¹⁸ Years later, the *Waterkeeper* court similarly found that owners and operators of discharging Large CAFOs have historically “improperly tried to circumvent the permitting process.”¹¹⁹ The history of the CAFO regulations’ implementation demonstrates, therefore, that CAFOs, and particularly those facilities with no history of documented discharges, have little incentive to seek permit coverage absent a regulatory presumption that they must.¹²⁰

Requiring permit coverage of facilities that actually discharge is not only consistent with the purposes of the Act, but it is necessary to effectuate the *Waterkeeper* court’s call for regulation “in fact, not just in principle.”¹²¹ Given the overwhelming evidence that CAFO facilities and land application areas are significant sources of point source pollution, and that they are not effectively regulated under the current NPDES program, a decision not to establish a presumption that certain CAFOs actually discharge would be arbitrary and capricious. Moreover, as the next section will discuss, a presumption that all CAFOs that land apply also discharge pollutants would independently follow from a more reasonable interpretation of the agricultural stormwater exemption.

b. EPA Must Revise its Interpretation of the Agricultural Stormwater Exemption to Give Effect to Congress’ Intent that No CAFO–Related Discharges Are Exempt from the Act’s Permitting Requirements

The failure of the current permitting scheme to effectively limit pollutant discharges from CAFOs is also attributable in part to EPA’s strained interpretation of the agricultural stormwater exemption. Despite the fact that the environmental impacts from land application of manure are well known, EPA has adopted an overly broad reading of the agricultural stormwater exemption that has tied its hands from regulating much of this CAFO pollution. This reading, which defines precipitation-related discharges of manure as non-point source pollution when land-applied in accordance with an NMP, rather than as point source pollution subject to the NPDES program, is

¹¹⁶ 2001 Proposed CAFO Rule, 66 Fed. Reg. at 2963.

¹¹⁷ *Id.*

¹¹⁸ 2003 CAFO Rule, 68 Fed. Reg. at 7180.

¹¹⁹ *Waterkeeper Alliance*, 399 F.3d at 506, n.22.

¹²⁰ Cases holding EPA lacks authority to assess administrative penalties for the failure to apply for a NPDES permit have made the situation worse by removing much of the incentive for sporadic dischargers to apply for NPDES permits. *See Service Oil v. EPA*, 590 F.3d 545, 550-51 (8th Cir. 2009), *Nat’l Pork Producers Council*, 635 F.3d at 752-53.

¹²¹ *Waterkeeper Alliance*, 399 F.3d at 498.

contrary to the language and purpose of the Act. Moreover, it virtually guarantees that there will be unregulated runoff of CAFO pollution to waterways—the very concern that prompted Congress to regulate CAFOs as point sources in the first place.¹²²

In light of mounting evidence that the current interpretation and permit scheme have generally failed to result in CAFO permitting, allowing pollution from this industry to continue degrading waterways across the country, EPA’s current interpretation of the exemption is arbitrary and capricious, and contrary to the CWA. EPA must therefore revise its interpretation of the exemption by bringing it in line with the statutory directive to regulate CAFO discharges as point source pollution.

i. EPA’s Current Interpretation of the Agricultural Stormwater Exemption

The CWA specifically excludes “agricultural stormwater” from the definition of point source, but does not define the term, leaving some discretion to EPA to interpret the exemption’s scope in light of the statutory context. EPA’s current CAFO regulations define “agricultural stormwater discharge” as “a precipitation-related discharge of manure, litter or process waste water from land areas under the control of a CAFO” where such materials have been applied “in accordance with site specific nutrient management practices.”¹²³ CAFO discharges associated with precipitation are therefore considered non–point source pollution, and are exempt from permitting requirements under the NPDES program.

This interpretation has made it virtually impossible for EPA and state regulators to ensure that discharges are actually caused by precipitation events, rather than by over–application of CAFO wastes to fields, or otherwise improper manure management. The rules impose minimal requirements before a CAFO operator is permitted to avail him or herself of this blanket exemption from regulation under the Act. Unpermitted Large CAFOs are simply instructed to maintain on–site documentation demonstrating nutrient management practices that “ensure appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater” in

¹²² See S. Rep. No. 92-414, 92-93 (1971), *reprinted in* 1972 U.S.C.C.A.N. 3668, 3670 (“Animal and poultry waste, until recent years, has not been considered a major pollutant The picture has changed dramatically, however, as development of intensive livestock and poultry production on feedlots and in modern buildings has created massive concentrations of manure in small areas. The recycling capacity of the soil and plant cover has been surpassed Precipitation runoff from these areas picks up high concentrations of pollutants which reduce oxygen levels in receiving streams and lakes [W]aste management systems are required to prevent waste generated in concentrated production areas from causing serious harm to surface and ground waters.”). While the *Waterkeeper Alliance* court did not find this legislative history dispositive on the meaning of the subsequently enacted exemption, it underscores the ambiguity in the statute that affords EPA authority to revise its interpretation.

¹²³ 40 C.F.R. § 122.23(e).

order to qualify for the exemption.¹²⁴ CAFO operators must make such documentation available to EPA or state permitting agencies upon request.¹²⁵

These site-specific NMPs are never submitted to regulatory authorities unless EPA or state agencies specifically request to review a plan, and the rules do not require any independent verification that NMPs are calculated to ensure land application of wastes occurs at agronomic rates.¹²⁶ Consequently, despite the fact that land application is a predominant means of CAFO waste disposal,¹²⁷ there is no federal requirement that EPA or state permitting authorities exercise *any* oversight to ensure animal wastes will be applied to land at agronomic rates¹²⁸ and that any discharges are precipitation-related. The current permitting requirements therefore incentivize CAFO operators to over-apply animal wastes to cropland, while claiming any confirmed discharges are exempt from permitting as agricultural stormwater and avoiding regulation under the NPDES program.

ii. EPA Has Clear Authority to Revise its Interpretation of the Agricultural Stormwater Exemption as Requested in this Petition

Because the term “agricultural stormwater” is not defined in the CWA, the statute is somewhat ambiguous as to the scope of the agricultural stormwater exemption, and EPA is free to revise its interpretation so long as it reflects a permissible construction of the statute.¹²⁹ It is well-settled that agencies are “free to change course as their expertise and experience may suggest or require.”¹³⁰ Over the past decade, the Agency has continued to amass evidence of widespread CAFO land application pollution, increasing scale and concentration of CAFOs and their waste, and persistent failures to require permits for CAFOs whose land application contribute to water impairments under the existing regulatory scheme—precisely the type of circumstances in which an updating of statutory interpretation is reasonable and necessary. The *Waterkeeper* decision in no way diminishes EPA’s authority to revise its interpretation. While the *Waterkeeper* court upheld EPA’s current interpretation of the agricultural stormwater

¹²⁴ *Id.*; *Id.* § 122.42(e)(1)(vi)-(ix) (specifying additional criteria that land application practices must meet in order to qualify for the “agricultural stormwater exemption”).

¹²⁵ *Id.* § 122.23(e)(2).

¹²⁶ State laws may impose additional requirements.

¹²⁷ Marc Ribaud, et al., *Consequences of Federal Manure Management Proposals: Cost to Swine Operations from Land Applying Manure 1* (paper presented at American Agricultural Economics Association Meeting, Long Beach, CA, July 28-30, 2002), <http://ageconsearch.umn.edu/bitstream/19735/1/sp02ri01.pdf>.

¹²⁸ Though, as discussed elsewhere in this Petition, even “agronomic” application rates are not capable of achieving zero discharge.

¹²⁹ *Chevron v. NRDC*, 467 U.S. 837, 863-64 (1984) (“the fact that the agency has from time to time changed its interpretation of [a statutory term] does not . . . lead us to conclude that no deference should be accorded the agency’s interpretation of the statute”).

¹³⁰ *Ramaprakash v. FAA*, 346 F.3d 1121, 1124 (D.C. Cir. 2003) (citing *Greater Boston Television Corp. v. FCC*, 444 F.2d 841, 852 (D.C. Cir. 1970)).

discharge exemption against challenges from environmental groups, it did so based on deference principles, clearly indicating that other interpretations may be more reasonable.¹³¹

More than a decade after the *Waterkeeper* decision, there is a growing body of factual evidence demonstrating that the current interpretation is in fact unreasonable because it subverts the central purpose of the Act. Evidence of widespread CAFO pollution escaping CWA regulation necessitates a revision of EPA's current interpretation. EPA must adopt the interpretation that no discharges from CAFOs—including from land application areas under the control of the CAFO—are exempt from the definition of point source pursuant to the agricultural stormwater exemption. Even assuming the *Waterkeeper* court properly deferred to EPA's current interpretation in 2005, a mutually exclusive reading of the two terms is the most reasonable interpretation of the agricultural stormwater exemption because it effectuates the plain language of the statute, which provides that CAFOs are to be regulated as point sources, and aims to eliminate pollution from such sources. EPA's revised interpretation of the agricultural stormwater discharge exemption would be entitled to substantial deference, so long as the Agency provides a reasonable explanation for the revision.¹³²

iii. The Language and History of the Statute Indicate Congress' Intent to Regulate All CAFO Pollution

Beginning with the 1972 drafting of the Water Pollution Control Act Amendments, Congress made a policy judgment that CAFO wastes were fundamentally different from other types of agricultural pollution. The 1972 Act Amendments encoded this policy judgment, recognizing that the volume and concentration of waste produced by CAFOs necessitated treating these types of facilities differently than other sources of agricultural pollution.¹³³ There is no general exemption from compliance with the CWA for agricultural pollution sources. To the contrary, the Act broadly prohibits the “discharge of a pollutant,” including agricultural wastes,¹³⁴ by any person from any point source, including CAFOs.¹³⁵ The Act's default rule therefore requires regulation of CAFOs under the NPDES program, as distinct from other sources of agricultural pollution, which were historically exempt.

¹³¹ *Waterkeeper Alliance*, 399 F.3d at 507 (“Congress has not addressed the precise issue . . . as a result, the operative question we must consider becomes, pursuant to *Chevron*, whether the CAFO Rule's exemption for ‘precipitation-related’ land application discharges is grounded in a ‘permissible construction’ of the Clean Water Act.”). In other words, the Court at that time found that EPA's interpretation was a permissible one, but not necessarily the most reasonable or the only reasonable interpretation of the statute. *Id.* at 509.

¹³² *Chevron*, 467 U.S. at 863-64; *FCC v. Fox Television Stations*, 556 U.S. 502, 515 (2009). The Supreme Court has noted that agency inconsistency “is not a basis for declining to analyze the agency's interpretation under the *Chevron* framework.” *Nat'l Cable & Telecomm. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967, 981 (2005).

¹³³ See S. Rep. No. 92-414, 92-93 (1971), reprinted in 1972 U.S.C.C.A.N. 3668, 3670. See also *Cnty. Ass'n for Restoration of the Env't v. Sid Koopman Dairy*, 54 F.Supp.2d 976, 981 (E.D. Wash. 1999) (finding that it would “avoid the clear intent of Congress as expressed in the CWA and by EPA in its NPDES regulations” to exempt discharges resulting from the land application of manure from the definition of “point source”).

¹³⁴ 33 U.S.C. § 1362(6).

¹³⁵ *Id.* §§ 1311(a), 1362(14).

The legislative and regulatory history of the 1987 Amendment, which established the agricultural stormwater exemption, make clear that the terms “agricultural stormwater” and “concentrated animal feeding operation” are most logically read as being mutually exclusive. While Congress did not explain the relationship between the new term “agricultural stormwater” and the existing “concentrated animal feeding operation,”¹³⁶ the new language was merely added to the end of the definition of “point source,” without any alteration of the existing text. Because there is no indication in the statute or in the legislative history that Congress sought to re-address the status of CAFOs as point sources, the 1987 Amendment cannot be read to amend this existing policy judgment. To the contrary, it is well-settled law that “Congress does not alter a regulatory scheme’s fundamental details in vague terms or ancillary provisions.”¹³⁷

Here, Congress left no indication that it had reconsidered its reasons for including CAFOs in the definition of point source. Nor did it discuss the definition of “agricultural stormwater” in a way that could justify a departure from the meaning of that term as it was understood at the time. Rather, the 1987 Amendment is best read to codify already-existing exemptions for certain types of non-point source agricultural pollution and clarify that the non-exclusive definition of point source was not intended to sweep such non-CAFO farm runoff into the regulatory scheme. By retaining the term “concentrated animal feeding operation,” unqualified, in the definition of “point source,” the legislative history makes clear that the addition of the “agricultural stormwater” exclusion was not intended to alter the scope of the NPDES program with respect to CAFOs.

The regulatory history preceding the statutory amendment supports the conclusion that Congress did not intend to include any CAFO-related discharges within the meaning of “agricultural stormwater.” Prior to the 1987 Amendment, EPA had already established certain agricultural exemptions from the point source definition through rulemaking. The 1980 CWA implementing regulations excluded certain types of agricultural discharges from NPDES permit requirements.¹³⁸ Specifically, the regulations excluded from the permit program “[a]ny introduction of pollutants from non-point-source agricultural and silvicultural activities, including runoff from orchards, cultivated crops, pastures, range lands, and forest lands, *but not discharges from concentrated animal feeding operations.*”¹³⁹ In other words, while certain non-point source agricultural runoff was exempt from NPDES program requirements under the regulations, waste from CAFOs was not considered non-point source pollution, and was therefore ineligible for the exemption. As such, the 1987 addition of an “agricultural stormwater

¹³⁶ *Waterkeeper Alliance*, 399 F.3d at 507 (“the Act makes absolutely no attempt to reconcile the two [provisions]”).

¹³⁷ See *Whitman v. Am. Trucking Ass’n*, 531 U.S. 457, 458 (2001).

¹³⁸ *Consolidated Permit Regulations: RCRA Hazardous Waste, SDWA Underground Injection Control; CWA National Pollutant Discharge Elimination System; CWA Section 404 Dredge or Fill Programs; and CAA Prevention of Significant Deterioration*, 45 Fed. Reg. 33290, 33442 (May 19, 1980) (codified in relevant part at 40 C.F.R. § 122.3(e)); see also 48 Fed. Reg. 14146-01 (Apr. 1, 1983) (reorganized version of permit program requirements).

¹³⁹ *Id.* (emphasis added). This exclusion was challenged in *NRDC v. EPA*, No. 80-1607 (filed June 3, 1980), but that challenge was dismissed as a result of the agricultural stormwater discharge amendment in 1987. See *National Pollutant Discharge Elimination System Permit Requirements*, 54 Fed. Reg. 246-01, 247 (Jan. 4, 1989).

discharge” exemption is most reasonably read to codify EPA’s then-existing exemption for certain non-CAFO-related agricultural pollution.¹⁴⁰ Congress did not indicate any intent to depart from the existing regulatory scheme, so the agricultural stormwater exemption cannot be read to cover CAFO-related discharges.¹⁴¹

Because the current interpretation allows the exception to swallow the rule, EPA must adopt the position that no CAFO-related discharges are exempt from regulation as point source pollution under the agricultural stormwater discharge exemption. EPA has authority to revise its interpretation of the exemption, and the proposal to read “CAFO” and “agricultural stormwater” as mutually exclusive would not only be entitled to substantial deference, but would be the most natural reading of the Act, its legislative history, and its regulatory history. A revised interpretation of the agricultural stormwater exemption would also best implement the policy choice underlying Congress’ decision to treat CAFOs as point sources of pollution and its intent to eliminate point source discharges of pollution to waters of the U.S.

c. EPA Must Ensure that Permitting Agencies Co-Permit Integrators and other Operators with Producers

EPA has long understood that entities that “exercise substantial operational control over CAFOs” meet the CWA regulatory definition of “operator” and should therefore be co-permitted or required to hold a separate NPDES permit.¹⁴² In the 2001 proposed CAFO rule, EPA acknowledged that integrators are increasingly exercising control over where CAFOs are located, how they raise animals, and how they manage waste, including through production contracts and direct ownership of CAFO livestock.¹⁴³ As EPA pointed out, even in 2001 “[p]roduction contracting dominate[d] U.S. broiler and turkey production,” and 40% and 30% of eggs and hogs, respectively, were produced under contract.¹⁴⁴ By 2014 just four companies controlled production of nearly one third of U.S. layer hens, and by 2012 more than 60% of hogs were raised under contract and packers owned more than one in twenty cattle slaughtered.¹⁴⁵

These dramatic increases in processor consolidation and control over CAFOs directly impacts water quality, in part because CAFOs “tend to locate in close proximity to feed and meat packing plants,” which leads to increased concentration and “thus rais[es] the potential for increased environmental pressure in those areas.”¹⁴⁶ In the tightly controlled broiler chicken industry, this has led to such regional concentration that “in many regions, the scale at which

¹⁴⁰ See *Concerned Area Residents for the Env’t v. Southview Farm*, 34 F.3d 114, 123 (2d Cir. 1994) (holding that CAFOs, which are defined by the Act as “point sources,” are “not to be treated as [] agricultural nonpoint source operation[s]”).

¹⁴¹ See *Whitman v. Am. Trucking Ass’ns*, 531 U.S. at 458.

¹⁴² 2001 Proposed CAFO Rule, 66 Fed. Reg. at 3023.

¹⁴³ *Id.* at 3024.

¹⁴⁴ *Id.*

¹⁴⁵ *Factory Farm Nation* at 10, 11, 15.

¹⁴⁶ 2001 Proposed CAFO Rule, 66 Fed. Reg. at 3024.

chicken litter is produced is far more than crops can absorb.”¹⁴⁷ Moreover, “[e]very aspect of the birds’ care is regulated by the integrator,” and as a result, contract growers “do not have control over the inputs . . . including feed, medication, and the chickens themselves.”¹⁴⁸ Many of these inputs, such as pharmaceuticals, will end up in the chicken litter. Integrators’ many requirements thereby dictate their contract CAFOs’ day to day operations, as well as the location, quantity, and characteristics of the waste they produce.

Because integrators and other corporate entities are a driving force behind so many CAFOs’ operations and exercise so much control over them, EPA’s 2001 proposed rule solicited input on whether it should establish specific factors, such as ownership of CAFO animals or contractual agreements that dictate CAFO activities, that permitting agencies must consider in identifying “substantial operational control.” Recognizing that many of these integrators and other entities already meet the definition of an “operator,” EPA explained that its “proposal would *clarify*” that such entities “are subject to NPDES permitting requirements.”¹⁴⁹ EPA went further and stated unequivocally that it “believes that ownership of the animals establishes an ownership interest in the pollutant generating activity at the CAFO that is sufficient to hold the owner of the animal responsible for the discharge of pollutants from the CAFO.”¹⁵⁰ Despite all of these findings, EPA decided to maintain the status quo in the 2003 final rule.

The past 15 years have demonstrated that EPA’s hands-off approach has granted far too much discretion to states. In the absence of clear requirements from EPA explaining which entities meet the definition of an operator and must have permits, permitting agencies are simply not requiring co-permitting. In fact, in 2015 the Center for Progressive Reform found that *no states* are co-permitting integrators with their CAFO producers under their delegated NPDES programs.¹⁵¹ Just as EPA predicted in 2001, a scheme that leaves operator determinations to the state agency has meant that “the state . . . might not make them at all” and operators have continued to “inappropriately . . . avoid liability.”¹⁵²

EPA has more recently revisited the idea that unpermitted integrators are operators and should be permitted. In 2010, EPA issued its Chesapeake Bay Compliance and Enforcement Strategy, which was meant to complement the multi-jurisdictional Chesapeake Bay Total Maximum Daily Loads (TMDL) effort to restore the Bay. In the Strategy EPA named CAFO integrator liability enforcement actions in the Bay region among the “immediate” actions it could

¹⁴⁷ Rural Advancement Foundation International-USA, Under Contract: Farmers and the Fine Print, Viewers Guide 24 (2017), <http://rafiusa.org/undercontractfilm/press-kit/>.

¹⁴⁸ *Id.* at 20.

¹⁴⁹ 2001 Proposed CAFO Rule, 66 Fed. Reg. at 3024 (emphasis added).

¹⁵⁰ *Id.* at 3025.

¹⁵¹ Ctr. for Progressive Reform, *Integrator Liability: Legal Tools to Hold the Biggest Chicken Companies Responsible for Waste* 3, http://www.progressivereform.org/articles/Integrator_Liability_IssueAlert_1502.pdf (Mar. 2015).

¹⁵² 2001 Proposed CAFO Rule, 66 Fed. Reg. at 3025.

take to drive pollution reductions while the Bay states put longer-term TMDL programs into place.¹⁵³ More than six years later, it has failed to initiate any such actions, and took no action to support citizen litigants when they sued Perdue in federal court for illegal discharges from a Maryland contract operation.¹⁵⁴

Corporations such as Perdue and Tyson exercise substantial control over their contractors' production process and collect the profits generated. In light of their substantial stake in the venture, they should share in the liability that may result from discharges. Placing the entire permitting burden on producers is not only unfair, but also inefficient: if contracted farmers are wholly liable for the costs associated with water pollution, the integrators who control their operations will have no incentive to minimize the extent of such pollution. Co-permitting integrators would be an equitable step that would also create a sensible incentive scheme and likely to lead to the development of more cost-effective waste management systems.

EPA has already established that many of these corporate entities are CWA operators, but it must now clarify by regulation which entities meet the definition of an operator and are required to obtain NPDES permits. It will be entitled to substantial deference for a reasonable articulation of "substantial operational control," similar to that proposed in 2001. However, EPA must establish a more bright-line test for substantial operational control, rather than leaving that determination to state permitting agencies as previously proposed.¹⁵⁵ In light of the lack of integrator liability for operators that exercise increasing control over CAFOs and their pollution, a failure to impose unambiguous co-permitting requirements on integrators and state permitting agencies would be arbitrary and capricious.

d. EPA Should Revise the CAFO and Production Area Definitions and Designation Authorities, 40 C.F.R. § 122.23(b)-(c)

EPA should revise the definition of production area to resolve uncertainty created by courts, and should revise the CAFO definitions because as written, the current definitions prevent effective regulation of medium and small AFOs that are nonetheless significant sources of water pollution. Moreover, they create incentives for operators to avoid regulation by maintaining herd sizes just below the regulatory threshold. Specifically, EPA should revise its

¹⁵³ EPA Office of Enforcement and Compliance Assurance, Chesapeake Bay Compliance and Enforcement Strategy 4 (May 2010), <http://www.epa.gov/oecaerth/civil/initiatives/chesapeake-strategy-enforcement.pdf>.

¹⁵⁴ See *Waterkeeper Alliance, Inc. v. Alan Hudson*, No. WMN-10-487, 2012 WL 6651930 (D. Md. Dec. 20, 2012). Perdue ultimately prevailed in this case when the court did not find sufficient proof of a discharge from the broiler operation. But the judge's prior order denying Perdue's Motion to Dismiss recognized that integrators who exercise sufficient control over contractors may be held liable as CWA operators. Memorandum on Motions to Dismiss, *Assateague Coastkeeper et al. v. Alan and Kristin Hudson Farm et al.*, 727 F. Supp. 2d 433 (D. Md. Jul. 21, 2010).

¹⁵⁵ See 2001 Proposed CAFO Rule, 66 Fed. Reg. at 3025 ("The proposed regulations would provide that a person is an 'operator' when 'the Director determines' that the person exercises substantial operational control over the CAFO.").

CAFO definitions to either eliminate or shrink the “Medium CAFO” category and to make it easier for both state agencies and EPA to designate a Small (or Medium, if EPA retains that category) AFO as a CAFO, such that facilities with the same environmental impact as Large CAFOs are subject to the same degree of environmental regulation.¹⁵⁶

i. EPA Should Revise the Definition of Production Area

EPA’s existing definition of “production area” is appropriately broad and non-exclusive. A reasonable interpretation of this definition should ensure that all Large CAFO-related discharges are subject to the ELGs if they are not from land application areas, and should preclude any application of the agricultural stormwater exemption to discharges from non-land application areas associated with a CAFO. However, the 2014 *Alt v. EPA* decision adopted a strained interpretation of the production area, creating the new concept of a CAFO “farmyard” that it declared eligible for the agricultural stormwater exemption, and thereby created uncertainty where none had previously existed.¹⁵⁷ EPA failed to appeal that erroneous District Court decision, and must now eliminate any purported ambiguity or regulatory gaps through its rulemaking authority.

Of course, if EPA acts to properly limit the scope of the agricultural stormwater exemption, that revision would remedy much of the uncertainty created by *Alt*. However, EPA should additionally clarify the scope of the production area to ensure that all areas associated with the CAFO facility are subject to the CAFO ELGs. EPA can do this by simply adding language to the existing production area definition explaining that each CAFO has a single, contiguous production area that encompasses all listed aspects of the operation and all areas in between, and that the agricultural stormwater exemption may never be applied to discharges from the CAFO production area.

¹⁵⁶ The regulations divide AFOs into three groups—Large, Medium, and Small, based on the number of animals raised at the facility. All large AFOs are considered Large CAFOs, based solely on the size threshold. But a Medium AFO is only considered a CAFO if it both meets the specified size threshold and satisfies one of two conditions: (1) the facility must discharge pollutants to a water of the U.S. through a man-made ditch, flushing system, or other similar man-made device; or (2) the facility must discharge pollutants directly into a water of the U.S. which originates outside of and passes over, across, or through the facility, or otherwise comes into direct contact with the animals confined in the facility. “Small CAFO” is defined in the regulations as any AFO “that is designated as a CAFO and is not a Medium CAFO.” Irrespective of size threshold, AFOs can be designated as CAFOs by the appropriate NPDES permitting authority if, upon inspection of the operation, the authority determines that the facility “is a significant contributor of pollutants to waters of the United States.” 40 C.F.R. § 122.23(b)-(c). In making this designation, permitting authorities are directed to consider: (1) the size of the AFO and the amount of waste reaching waters of the U.S.; (2) the location of the AFO relative to jurisdictional waters; (3) the means of conveyance of animal wastes and process waste waters to waters of the U.S.; (4) the slope, vegetation, rainfall, and other factors affecting likelihood or frequency of discharge; and (5) other relevant factors. *Id.* § 122.23(c)(2).

¹⁵⁷ *Alt v. EPA*, 979 F. Supp. 2d 701, 711 (N.D. W. Va., Oct. 23, 2013).

ii. EPA Should Revise or Eliminate the “Medium CAFO” Category

While the environmental concerns associated with many Medium AFOs differ only in scale, not type, from those caused by Large CAFOs, EPA’s default position under the current regulations is to leave the former unregulated. However, there is evidence that Medium AFOs are significant polluters,¹⁵⁸ and EPA’s current approach does not adequately ensure that polluting Medium AFOs are designated as CAFOs or that designated CAFOs are sufficiently regulated.

The current definition of “Medium CAFO” inhibits effective regulation of these facilities in two ways. First, a Medium AFO can only be defined as a CAFO if the operation discharges from the production area directly or via a manmade conveyance, and can only be designated as a CAFO after an on-site inspection demonstrates that it is a significant contributor of pollutants to a water of the U.S.¹⁵⁹ This means that Medium AFOs have no incentive or obligation to seek NPDES permit coverage until they have been caught directly discharging into a jurisdictional water, nor do they have any incentive or obligation to control their land application discharges. Even the most egregious over-application of waste on cropland or application in circumstances that lead to discharges are not grounds for CAFO designation. As discussed elsewhere in this Petition, even permitted CAFOs’ NMPs are not “zero discharge” plans; the application practices of facilities with no plans whatsoever are even more likely to lead to discharges. Second, even where Medium (or Small) AFOs are designated as CAFOs, EPA has not promulgated federal ELGs for these facilities, leaving permitting authorities to establish BPJ effluent limitations for these operations on an ad hoc basis.¹⁶⁰

Despite EPA’s failure to comprehensively track the nation’s CAFOs, literature and anecdotal evidence indicate that the current size-based Large CAFO definition has incentivized AFO operators to skirt environmental regulations by maintaining animal numbers just under the Large CAFO threshold. One empirical study found, for example, that in the four years after promulgation of the 2003 CAFO Rule, “7.7% of potentially regulated operations near the threshold ‘avoided’ [regulation] by remaining just below the cutoff.”¹⁶¹ The same study found that “avoidance” is even more prominent among new facilities than among existing

¹⁵⁸ See, e.g., J. Mark Powell, et al., *Environmental Policy and Factors that Impact Manure Management on Wisconsin Dairy Farms*, Proceedings of the Symposium on the State of the Science of Animal Manure 3-4 (2005) (Wisconsin dairy farms with small and medium herd sizes have the lowest manure collection rates, and are often located close to streams or springs; these farms may require “particular attention” with respect to manure management).

¹⁵⁹ 40 C.F.R. §§ 122.23(b)(6), (c).

¹⁶⁰ *Id.* § 412; Permit Writers’ Manual at 4-17; EPA, *Producers’ Compliance Guide for CAFOs* 5 (2003), <https://www.epa.gov/sites/production/files/2015-06/documents/compliance-cafos.pdf>.

¹⁶¹ Stacy Sneeringer and Nigel Key, *Effects of Size-Based Environmental Regulations: Evidence of Regulatory Avoidance*, 93 Am. J. Agric. Econ. 1189, 1190 (2011), <http://faculty.smu.edu/millimet/classes/eco7377/papers/sneeringer%20key%202011.pdf>.

operations.¹⁶² Summarizing its findings, the study concluded that increased numbers of operations just under the regulatory thresholds between 1997 and 2007 coincided with increased environmental regulations—namely EPA’s 2003 CAFO Rule.¹⁶³

Producer-oriented publications from various agricultural extension networks further support this common-sense finding. In a document entitled “How to Avoid CAFO Status,” soil specialists at the Colorado State University Cooperative Extension recommended that AFO operators inspect their facilities to determine whether any of the size or discharge criteria that would render such facilities CAFOs were met—and if so, “change it, so you won’t be defined or designated as a CAFO in the future.”¹⁶⁴

While EPA adopted this three-tiered system in order to ease states’ burdens in revising CAFO regulations, many of which had included this structure prior to the 2003 Rule,¹⁶⁵ as implemented, this system arbitrarily exempts a large number of operations approaching the Large CAFO size threshold and their land application practices from regulation, and encourages circumvention of laws governing permitted facilities. Given these failings, EPA should either eliminate the “Medium CAFO” category altogether and expand the Large CAFO category to include these facilities, or remove the requirement that a Medium AFO directly discharge from the production area to qualify as a CAFO. Such a revision, particularly if made in conjunction with the proposed revision to the agricultural stormwater exemption, would bring many discharging Medium AFOs into the NPDES permit program and significantly benefit water quality.

iii. EPA Should Impose Meaningful Limits on States’ Discretion in Designating AFOs as CAFOs

Current CAFO regulations allow states an inordinate amount of discretion in determining whether to regulate Small or Medium AFOs by designating them as CAFOs. Such a designation requires that a facility be “a significant contributor of pollutants to waters of the United States.”¹⁶⁶ The term “significant” is not defined in the regulations, however, so state permitting authorities have an enormous amount of leeway in determining whether to designate an AFO as

¹⁶² *Id.* at 1202 (noting that “new entrants exhibit a 10.5% avoidance rate, while that for continuing operations is only 5.2%”).

¹⁶³ *Id.* at 1207-09; see also Bradley Crawford, *Going Half Hog: CAFOs Downscale in the Face of Regulation*, Chicago Policy Review (May 3, 2012), <http://chicagopolicyreview.org/2012/05/03/going-half-hog/>.

¹⁶⁴ Jessica G. Davis, *How to Avoid CAFO Status*, Colorado State University Cooperative Extension.

¹⁶⁵ See 2003 CAFO Rule, 68 Fed. Reg. at 7189-90 (stating that eliminating the three-tier structure “at this point in time would be unnecessarily disruptive in a number of States that currently have three-tier CAFO programs in place.”).

¹⁶⁶ 40 C.F.R. § 122.23(c). In making this designation, permitting authorities are directed to consider: (1) the size of the AFO and the amount of waste reaching waters of the U.S.; (2) the location of the AFO relative to jurisdictional waters; (3) the means of conveyance of animal wastes and process waste waters to waters of the U.S.; (4) the slope, vegetation, rainfall, and other factors affecting likelihood or frequency of discharge; and (5) other relevant factors. *Id.* § 122.23(c)(2).

a CAFO. Moreover, this term is so vague that it essentially precludes citizens from contesting the determination of the state agency.

While the regulations provide an open-ended list of criteria that permitting authorities may consider in making such a determination, the rules give no indication of how permitting authorities are to weigh these criteria. The complete lack of standards or accountability for state designation of Small CAFOs, in practice, renders this tier of the CAFO definition a nullity, despite the fact that even Small AFOs can cause large discharges and severe water quality impacts.¹⁶⁷ EPA should therefore revise the definition of “Small CAFO” to apply the current criteria for the Medium CAFO definition – if a Small AFO discharges from the production area, it should be defined as a CAFO. It simply defies logic to permit direct discharges from any size of AFO into jurisdictional waters without imposing basic NPDES permit requirements. Finally, EPA should expand its own authority to designate an AFO as a CAFO in other circumstances when the state permitting agency fails to act. This authority should not hinge on a finding that an AFO is contributing to a downstream water quality impairment.¹⁶⁸

Overall, EPA’s current CAFO regulations have failed to effectively bring discharging CAFOs and AFOs into the NPDES program, and EPA must establish presumptions that certain CAFOs discharge, close the agricultural stormwater loophole, affirm that integrators who qualify as operators must obtain permits, and update its CAFO definitions to reflect the fact that a functional program must better control pollution from Medium and Small AFOs. Any course of action short of adopting this set of revisions will allow the status quo of unregulated CAFO pollution to continue.

B. EPA MUST STRENGTHEN CAFO NPDES PERMITS TO ADEQUATELY PROTECT WATER QUALITY

Under EPA’s current regulations and effluent guidelines, even the minority of CAFOs that have NPDES permits are inadequately regulated. The regulations applicable to all CAFOs purport to require CAFOs to maintain adequate waste storage and implement NMPs, and the effluent guidelines applicable to Large CAFOs further impose a zero discharge requirement on the production area under most circumstances and require various best management practices and minimization of runoff from land application areas. Yet the CAFO rules suffer from unclear language and fail to require the basic water quality monitoring required of virtually every other point source category, instead relying only on annual reports of waste applications. Such

¹⁶⁷ See, e.g., Adam Rodewald, Green Bay Press-Gazette, Manure Spills Putting Water Supply at Risk (Feb. 8, 2015), <http://www.greenbaypressgazette.com/story/news/investigations/2015/02/06/manure-spills-water-supply/22983669/>; Bob Dohr, Green Bay Press-Gazette, One Million Gallons of Manure Dumped in Spencer Wetland (Aug. 13, 2014), <http://www.greenbaypressgazette.com/story/news/local/2014/08/12/farm-cited-manure-discharge/13983497/> (discussing a 120-head Wisconsin dairy that spilled an estimated one million gallons of manure from a storage tank into a wetland and the Eau Pleine River between 2013 and 2014).

¹⁶⁸ 40 C.F.R. § 122.23(c)(1).

monitoring is essential, particularly given the other weaknesses in EPA's permit scheme. EPA's CAFO ELGs do not apply to Small or Medium CAFOs, leaving these permits' limits up to states. The ELGs also fail to prohibit certain practices that inherently pose threats to water quality from both the production and land application areas, and rely on state-based nutrient management requirements derived to maximize crop yield, rather than protect water quality. This approach addresses CAFO waste as though it is merely manure, and as a result EPA has also entirely overlooked numerous pollutants of concern.

To ensure that CAFO permits adequately protect water quality and provide necessary transparency and enforceability, EPA must adopt common-sense waste management and monitoring requirements, strengthen the basic requirements applicable to all CAFOs, regulate all important CAFO pollutants through the CAFO ELGs, and otherwise strengthen the CAFO ELGs to prohibit practices known to harm water quality.

a. EPA Must Strengthen and Clarify the Requirements Applicable to All CAFOs, 40 C.F.R. § 122.42(e)

While it is commendable that EPA has established industry-specific regulations for CAFO NPDES permits in addition to the ELGs, unlike many other regulated industries, the regulations lack clarity and accountability. The Large CAFO ELGs do not adequately make up for these shortcomings.

i. EPA Must Require Water Quality Monitoring in CAFO NPDES Permits

EPA has long failed to require CAFOs to meet one of the most basic requirements of NPDES permits—water quality monitoring capable of assuring compliance with permit terms. The CWA's permitting provisions require that NPDES permits contain conditions, including conditions on data collection and reporting, to “ensure compliance” with the Act.¹⁶⁹ The accompanying CWA regulations clearly require all NPDES permits to include certain monitoring and reporting requirements designed to “assure compliance with permit limitations”¹⁷⁰ These include, *inter alia*, “requirements to monitor” “[t]he mass (or other measurement specified in the permit) for each pollutant limited in the permit,” “[t]he volume of effluent discharged from

¹⁶⁹ 33. U.S.C. § 1342. *See also* *NRDC v. EPA*, 808 F.3d 556, 580 (2d Cir. 2015) (“Under the CWA, NPDES permits must contain conditions that require both *monitoring* and *reporting of monitoring results* of TBELs and WQBELs to ensure compliance.”).

¹⁷⁰ 40 C.F.R. § 122.41(i)(1). Moreover, because these monitoring requirements apply to all NPDES permits, EPA's rejection of groundwater and surface water monitoring requirements in determining BAT for the CAFO industry, and the *Waterkeeper* court's deference to EPA's rejection of groundwater monitoring, is irrelevant to this consideration. The question of surface water monitoring as part of BAT was not before the court, nor was the question of surface water monitoring as a general requirement of NPDES permits. *Waterkeeper Alliance*, 399 F.3d at 513-15.

each outfall,” or “[o]ther measurements as appropriate.”¹⁷¹ Permit monitoring provisions must further specify the “type, intervals, and frequency [of sampling] sufficient to yield data which are representative of the monitored activity, including, when appropriate, continuous monitoring.”¹⁷² Permittees must report monitoring results “on a frequency dependent on the nature and effect of the discharge, but in no case less than once a year.”¹⁷³ In light of these statutory and regulatory requirements, “[g]enerally, ‘an NPDES permit is unlawful if a permittee is not required to effectively monitor its permit compliance.’”¹⁷⁴

CAFOs are point sources subject to these permitting provisions, and persistent pollution from these sources has demonstrated that facility-level effluent monitoring on or adjacent to CAFO production and land application areas is necessary to meet the objectives of the CWA. Yet permitting agencies have overwhelmingly failed to incorporate any of these required monitoring provisions into CAFO NPDES permits. EPA must fill this regulatory gap by directly addressing monitoring in the CAFO regulations. To properly implement compliance monitoring, CAFO permits must require monitoring for, *inter alia*, pH, total nitrogen, ammonia nitrogen, nitrate, total phosphorus, specific conductance, biochemical oxygen demand, fecal coliform, temperature, and total suspended solids,¹⁷⁵ and must require such monitoring at points of discharge from the production and land application areas, as identified on a site-specific basis by a certified nutrient management planner. CAFO monitoring plans must be designed based on consistent EPA criteria for representative sampling and subject to public notice and comment prior to permit issuance.

EPA rejected water quality monitoring requirements in the 2003 CAFO Rule, citing “concerns regarding the difficulty of designing and implementing” an effective monitoring program, and “because the addition of in-stream monitoring does not by itself achieve any better controls on the discharges from CAFOs”¹⁷⁶ EPA did not revisit that decision in the 2008

¹⁷¹ 40 C.F.R. § 122.44(i).

¹⁷² 40 C.F.R. §§ 122.48(b), 122.44(i)(1). *See also* 40 C.F.R. § 122.41(j)(1). Section 308 of the CWA provides further support for monitoring, stating that “whenever [it is] required to carry out the objective” of the CWA, a permitting agency “(A) shall require the owner or operator of any point source to . . . (iii) install, use, and maintain such monitoring equipment or methods . . . as may reasonably be require[d].” 33 U.S.C. § 1318(a)(1)(A)(iii).

¹⁷³ 40 C.F.R. § 122.44(i)(2). The regulations further set out required monitoring methodologies, 40 C.F.R. § 136, and state that all NPDES permits must specify “[r]equirements concerning the proper use, maintenance, and installation, when appropriate, of monitoring equipment or methods.” 40 C.F.R. § 122.48(a).

¹⁷⁴ *NRDC v. EPA*, 808 F.3d at 583, quoting *NRDC v. Cty. of L.A.*, 725 F.3d 1194, 1207 (9th Cir. 2013).

¹⁷⁵ *See, e.g.*, Ca. Reg’l Water Quality Control Bd., North Coast Region, General NPDES Permit No. CAG011001, NPDES Permit for CAFOs, Attachment E – Monitoring and Reporting Program at E-4 [hereinafter *CA CAFO Permit*],

[http://www.waterboards.ca.gov/northcoast/water_issues/programs/dairies/pdf/120127/npdes/120127_12_0001_NPD ES_CAFO.pdf](http://www.waterboards.ca.gov/northcoast/water_issues/programs/dairies/pdf/120127/npdes/120127_12_0001_NPD%20ES_CAFO.pdf). This California CAFO General Permit requires surface and groundwater monitoring for numerous pollutant parameters. EPA should also require monitoring for additional pollutants of concern added to the CAFO ELGs, as proposed *infra*.

¹⁷⁶ 2003 CAFO Rule, 68 Fed. Reg. at 7217.

CAFO Rule.¹⁷⁷ But while EPA may believe that CAFO monitoring is more difficult than with other point source industry sectors, there are no exemptions from these basic compliance monitoring requirements. Moreover, various states have demonstrated that such monitoring is in fact practicable and affordable. California, for example, issues CAFO permits with representative effluent monitoring requirements for numerous CAFO pollutants of concern at both production and land application area discharge points.¹⁷⁸ Maryland also has language in its CAFO General Permit authorizing the state to require operators to design a monitoring plan to sample various manure pollutants and pesticides that could be present at potential production and land application area discharge points, to “evaluate the effectiveness” of the facility’s nutrient management plan and thereby assure compliance.¹⁷⁹ Contrary to EPA’s 2003 findings, it is now practicable to design and implement such CAFO monitoring requirements.

Outside of the CAFO permitting context, other states have found it possible to derive monitoring methods for pollution runoff from agricultural operations, or to require operations to derive their own methods on a case-by-case basis. The emergence of pollution credit trading programs has created the incentive for such monitoring to verify agricultural credit generation where states do not merely rely on modeling, such as in Oregon, where the creation of credits must be accompanied by a monitoring plan, and Ohio, where soil and water conservation professionals must monitor water quality to assess the effectiveness of agricultural credit sellers’ practices.¹⁸⁰ Evidently it is possible to develop representative monitoring of pollution from agricultural sources when those sources and permitting agencies have the incentive to do so; EPA cannot credibly claim that such monitoring is impracticable or ineffective while concurrently allowing states to use similar methods to verify credits and ostensibly demonstrate permit compliance in trading programs.

No existing CAFO requirements satisfy these monitoring requirements. The limited manure and soil nutrient sampling required under EPA’s regulations is helpful in attempting to determine an agronomic rate for waste application, but does not provide any information relevant to the CWA’s requirement that NPDES permits must assure compliance with water quality

¹⁷⁷ No group challenged this deficiency of the 2003 and 2008 CAFO Rules, and no court has upheld the agency’s decision to ignore these requirements.

¹⁷⁸ CA CAFO Permit at Attachment E.

¹⁷⁹ Md. Dep’t of the Env’t, General Discharge Permit for Animal Feeding Operations, Part V.A. (Dec. 1, 2014), http://www.mde.state.md.us/programs/Land/RecyclingandOperationsprogram/AFO/Documents/gd_permit%20signed.pdf.

¹⁸⁰ See, e.g., Oregon Water Quality Trading Program Regulations, OAR 340-039-0025(5)(g), http://arcweb.sos.state.or.us/pages/rules/oars_300/oar_340/340_039.html; Ohio Water Quality Trading Regulations, OAC 3745-5-04(K), <http://epa.ohio.gov/portals/35/rules/05-04.pdf>. While these two programs are not specifically designed to assure compliance with effluent limitations and leave too much discretion to individual agricultural polluters to design monitoring plans, they demonstrate that such site-by-site agricultural monitoring requirements do not suffer from the “prohibitive[] expens[e]” or “severe technological limitations” necessary for EPA to lawfully omit them from CAFO permits. See *NRDC v. EPA*, 808 F.3d at 582.

standards¹⁸¹ or EPA's CAFO ELG requirements to prevent production area discharges and minimize the potential for nutrient pollution from land application fields. EPA's regulations applicable to all NPDES permits speak for themselves, and must be given effect in permitting of CAFOs. In place of the 'honor system' currently in effect, EPA must require all permitted CAFOs to conduct periodic, representative water sampling and submit the results regularly via discharge monitoring reports—just like other industries are required to do. Absent such monitoring requirements, determining CAFO compliance with permit provisions becomes essentially impossible and CAFOs cannot reliably be held accountable for violations of permit terms.

ii. EPA Must Strengthen Annual Reporting Requirements

EPA should add to the CAFO annual reporting requirements, 40 C.F.R. § 122.42(e)(4). The annual report should of course include the results of the water quality monitoring discussed *supra*, though these results should also be submitted the permitting agency and EPA and made available to the public within 30 days of the monitoring event. The annual report should also include a summary of any discharges from land areas under the control of the CAFO; currently only production area discharges are subject to annual reporting requirements. In addition, the annual report should include not only the estimated amount of manure transferred to other persons, but also all of the manure transfer documentation that CAFOs are currently required only to keep on site pursuant to 40 C.F.R. § 122.42(e)(3). These common-sense additions to the existing annual report requirements will provide regulators and the public with far more of the information they need to assess a facility's compliance status without imposing significantly greater administrative burdens on permittees.

b. EPA Must Revise the Large CAFO Effluent Guidelines, 40 C.F.R. § 412

EPA's Large CAFO ELGs purport to prevent all production area discharges, absent a major storm event, and minimize the potential for nutrient runoff from land application.¹⁸² Specifically, land application practices must be subject to best management practices (BMPs) specified in 40 C.F.R. § 412.4.¹⁸³ BMPs for land application include the requirement that a CAFO utilizing land application develop a nutrient management plan meeting nine minimum

¹⁸¹ 40 C.F.R. § 122.4(d). For the same reason, EPA's 2003 rejection of monitoring in part because monitoring does not itself reduce CAFO pollution, 68 Fed. Reg. at 7217, is not a valid reason to omit monitoring requirements because as explained, that is not the purpose of monitoring requirements. Monitoring is required to demonstrate compliance, not to achieve it.

¹⁸² 40 C.F.R. § 412.31(a) (explaining BPT for dairy cows and cattle other than veal calves); 412.32 (explaining BCT for the same); 412.33 (explaining BAT for the same); 412.43 (explaining BPT for swine, poultry, and veal calves); 412.44 (explaining BCT for the same); 412.45 (explaining BAT for the same).

¹⁸³ See also 40 C.F.R. §§ 412.31(b); 412.33(b); 412.43(b); 412.44(b); 412.45(b).

elements;¹⁸⁴ determine application rates for manure, litter, and other process wastewater that minimize phosphorous and nitrogen transport to surface waters; sample and analyze manure and soil; inspect land application equipment for leaks; and comply with setback requirements.¹⁸⁵

But as evidenced by manure spills and widespread water contamination, these ELGs are failing to adequately control CAFO pollution. The regulations only require states to set BPJ limits for pollutants from Medium and Small CAFOs, ignore numerous pollutants of concern, leave various waste pathways unregulated, and fail to prohibit practices that are known to harm water quality and that prevent CAFOs from meeting narrative effluent limits. In short, they fall far short of representing the appropriate level of technology for reducing CAFO pollution.

i. The CAFO ELGs Should Apply to All CAFOs

In the 2001 CAFO rule preamble, EPA considered broadening the applicability of the CAFO ELGs beyond Large CAFOs to establish broader water quality protections and more uniform permit requirements, but its final 2003 rule maintained the status quo established in the 1970's.¹⁸⁶ EPA's rationale for leaving Small and Medium CAFO technology-based effluent limit determinations up to state permit writers was primarily out of a concern for flexibility and cost-effectiveness, as well as a finding that smaller facilities were more likely to have adequate land for manure disposal.¹⁸⁷ But the past decade has shown that the current approach is inadequate to protect water quality, and this is one aspect of the regulations where EPA could easily improve the quality and consistency of permits for a class of operations. If EPA applies the CAFO ELGs to all CAFOs, it will lessen the resource burden on state permit writers and improve water quality outcomes from this category of NPDES permits. Moreover, if EPA adopts certain rule changes discussed *supra*, particularly the revised Medium CAFO and agricultural stormwater definitions, far more facilities currently classified as non-CAFO AFOs will be subject to NPDES permitting requirements, increasing the cost benefits of uniform ELGs for state agencies and the

¹⁸⁴ NMP requirements are spelled out in 40 C.F.R. § 122.42, which requires that NMPs: (1) ensure adequate storage of manure, litter, and process wastewater; (2) ensure proper management of mortalities; (3) ensure that clean water is diverted from the production area; (4) prevent direct contact of confined animals with waters of the U.S.; (5) ensure that chemicals and other contaminants handled on-site are not disposed of in any manure, litter, process wastewater, or storm water or treatment system; (6) identify appropriate site specific conservation practices to be implemented (BMPs); (7) identify protocols for testing of manure, litter, process wastewater, and soil; (8) establish protocols to land apply manure, litter, or process wastewater in accordance with site specific nutrient management practices; and (9) identify records that will be maintained to document implementation and management of these requirements. 40 C.F.R. § 122.42(e)(1)(i)-(ix).

¹⁸⁵ 40 C.F.R. § 412.4(c)(1)-(5). The regulations also provide two alternatives to compliance with setback requirements. CAFOs can instead implement vegetated buffers meeting certain standards, or demonstrate that alternative conservation practices or field-specific conditions will provide pollutant reductions equivalent to, or better than, the otherwise required setback. 40 C.F.R. § 412.4(c)(5).

¹⁸⁶ 2003 CAFO Rule, 68 Fed. Reg. at 7208.

¹⁸⁷ *Id.*

regulatory certainty for operators.¹⁸⁸ At the very least, EPA should revisit its analysis of whether certain size classes of CAFOs have adequate land base for manure disposal, as this is a primary basis for EPA's differential treatment of these operations. The updated analysis should rely on current data and acknowledge the gaps in EPA's information about the CAFO universe, adopting conservative assumptions where critical information is unavailable.

ii. EPA Must Establish Application Disclosure requirements, BAT and NSPS Limits, and Monitoring Requirements for Additional CAFO Pollutants of Concern

EPA's long-standing approach to regulating CAFO discharges is reliant on the fundamental misconception that CAFO waste is comprised solely of manure. This approach has led EPA to disregard numerous pollutants of concern and instead simply regulate fecal coliform and certain constituents of CAFO waste that have agronomic value. This failure to establish BAT and NSPS limits for numerous pollutants that are not even currently disclosed in permit applications, in combination with the regulations' failure to require basic water quality monitoring, has led to a regulatory scheme in which CAFOs can use unknown combinations and quantities of metals, pharmaceuticals, cleaning products, and synthetic hormones, and then dispose of what ends up in the waste stream without demonstrated, effective controls. EPA must require CAFOs to disclose their use of these pollutants in permit applications, analyze the most effective means to prevent discharges of these pollutants, which are generally not agronomically useful and cannot be assumed to be utilized by crops, establish BAT and NSPS standards for CAFOs to control these pollutants, and incorporate these standards into the CAFO ELGs.

EPA's NPDES regulations require most applicants for NPDES permits to disclose pollutants of concern in their discharge in their permit application. For example, industrial facilities and large publicly owned treatment works must disclose any of a long list of hazardous substances if they will likely be present in their effluent, and provide monitoring data.¹⁸⁹ This is the only way for a permitting agency to ensure that it has established adequate limits to protect water quality, and a lack of such information hinders public participation in the permitting process. But inexplicably, EPA does not require CAFOs to disclose any pollutants beyond providing the quantity of "manure, litter, and wastewater" generated.¹⁹⁰ EPA must remedy this by establishing effluent limits on the full suite of CAFO pollutants of concern and incorporating application disclosure requirements into CAFO permit application Form 2B.

¹⁸⁸ Even if EPA adopts the recommended changes to the CAFO definitions, which would re-define certain CAFOs as Large CAFOs, broadening the applicability of the ELGs to all CAFOs would benefit water quality and streamline permitting for state agencies—particularly if adopted in conjunction with the proposals, discussed *infra*, to strengthen the ELGs and make them more protective of water quality.

¹⁸⁹ 40 C.F.R. §§ 122.21(2)(i), (iv); EPA NPDES Forms 2A and 2C.

¹⁹⁰ EPA NPDES Form 2B.

Each of the constituents listed above meets the CWA definition of a “pollutant.” Most of these substances are added to livestock feed, and EPA has established that the significant majority ends up in the animals’ manure. EPA regulates the various heavy metals sometimes used by CAFOs as feed additives as priority pollutants, and has noted their harmful impacts on aquatic life, as well as crops and public health.¹⁹¹ Pharmaceuticals and synthetic hormones added to livestock feed also plainly constitute pollutants. The CWA’s broad pollutant definition includes all “biological materials,” which clearly include biological pharmaceutical additives. And in the case of non-biological pharmaceutical and hormone agents, once they have fulfilled their purpose and been excreted in livestock waste, they are no longer serving a useful purpose and qualify as “chemical wastes.”¹⁹²

EPA acknowledges that its CAFO ELGs do not address all pollution that CAFOs discharge from the production area,¹⁹³ but it also fails to address other important pollutants discharged from both production and land application areas, and state permitting agencies are not acting to fill either of these gaps. Although permitting agencies are required to establish BPJ limits for pollutants that are not regulated under ELGs,¹⁹⁴ Petitioners are unaware of any state or EPA permits that address these pollutants, likely due both to the lack of CAFO monitoring requirements and the fact that the agricultural stormwater loophole enables states to simply assume without evidence that there are only minimal point source discharges of these constituents of CAFO waste. EPA and state agencies are not free to ignore these pollutants altogether, and the only reasonable way to ensure that permits adequately control all relevant pollutants is to establish BAT and NSPS standards for these pollutants and address them in the CAFO ELGs.

In addition to analyzing the availability of BMPs to reduce runoff from CAFO production and land application areas, the Agency has abundant recent evidence to inform an analysis of the costs of reducing or removing various feed additives from the waste stream altogether. Examples of tested pollution-reduction strategies include voluntary actions to remove arsenicals from poultry feed and certain companies’ decisions to reduce use of medically important antibiotics, in both cases without any significant adverse economic consequences.¹⁹⁵ CAFO operators have the

¹⁹¹ See 40 C.F.R. § 423, App. A; 76 Fed. Reg. at 65434.

¹⁹² 33 U.S.C. § 1362(6); *Nat’l Cotton Council*, 553 F.3d at 935-38.

¹⁹³ EPA has noted that the current CAFO ELGs do not address “plate chiller waste, filter backwash water, chemicals used in the production area (for disinfection) or pollutants that have fallen to the ground immediately downward from confinement building exhaust ducts and ventilation fans and are carried by precipitation-related or other runoff to waters of the US.” Permit Writers’ Manual at 4-18. This does not acknowledge metals, pharmaceuticals, or other pollutants of concern.

¹⁹⁴ See Hanlon BPJ Memo at Attachment A, pgs. 1-2 (“[A]n authorized state must include technology-based effluent limitations in its permits for pollutants not addressed by the effluent guidelines for that industry. 33 USC § 1314(b); 40 CFR § 122.44(a)(1), 123.25, 125.3. In the absence of an effluent guideline for those pollutants, the CWA requires permitting authorities to conduct the “BPJ” analysis discussed above on a case-by-case basis for those pollutants in each permit.”).

¹⁹⁵ In fact, recent USDA research indicates that the economic impact on producers of banning all growth promoting antibiotics—not only those used in human medicine—would be minimal. See, e.g., Stacy Sneeringer, James

ability to directly and significantly reduce the presence of metals and pharmaceuticals in their waste stream through modifying livestock feed inputs, and EPA cannot simply assume that the existing ELGs adequately address these pollutants. Some of these pollutants do not naturally break down or die like coliform bacteria, and may run off or move through soils differently than other pollutants, rendering different BMPs more effective at reducing their discharges and necessitating different BAT requirements.

Regarding metals, EPA's 2003 Rule estimated that the proposed regulations would only reduce Large and Medium CAFOs' metal discharges by 5%, and that assumed incorrectly that all Large CAFOs would obtain permits.¹⁹⁶ Given the low rates of permitting since, it follows that any reductions in metal pollution from the recent series of CAFO regulations have been negligible. EPA needs to address these pollutants directly by independently analyzing what technologies and practices are currently available to obtain results that are more protective of water quality. A useful analogy is sewage sludge, which shares certain characteristics with animal waste. EPA's sewage sludge application regulations impose metal concentration, cumulative loading, and annual loading limits. This is a stark example of EPA's inconsistent approaches to regulating human and animal wastes, and also provides a logical starting point in assessing BAT for CAFO applications of these pollutants.¹⁹⁷

iii. The CAFO ELGs' NMP Requirements Must Prioritize Protecting Water Quality

Even in the absence of discharge monitoring requirements and the data they would provide, it is apparent that EPA's reliance on states to establish effective nutrient management requirements has failed to protect water quality. The CAFO regulations must provide a stronger backstop against weak state permitting provisions. Specifically, EPA must establish stronger federal requirements to minimize harmful runoff, rather than relying almost solely on NMPs and on state-promulgated technical standards.

MacDonald, et al., *Economics of Antibiotic Use in U.S. Livestock Production*, ERR-200, USDA Econ. Res. Serv. 55 (Nov. 2015), https://www.ers.usda.gov/webdocs/publications/err200/55529_err200.pdf?v=42401; Choices, *Economics of Antibiotic Use in U.S. Swine and Poultry Production* (2015), <http://www.choicesmagazine.org/choices-magazine/theme-articles/theme-overview/economics-of-antibiotic-use-in-us-swine-and-poultry-production>. Research has also indicated that “[s]ome antibiotics no longer work as growth promoters or yield a result so slight that the additional profit does not even cover the cost of the antibiotics, yielding a net loss.” Food & Water Watch, *Antibiotic Resistance 101: How Antibiotic Misuse on Factory Farms Can Make You Sick* 13 (Mar. 2015), <http://www.foodandwaterwatch.org/sites/default/files/Antibiotic%20Resistance%20101%20Report%20March%202015.pdf>, citing Bonnie Marshall and Stuart Levy, *Food Animals and Antimicrobials: Impacts on Human Health*, 24 *Clinical Microbiology Reviews* 718, 723 (2011); S.S. Dritz et al., *Effects of Administration of Antimicrobials in Feed on Growth Rate and Feed Efficiency of Pigs in Multisite Production Systems*, 220 *J. Am. Veterinary Med. Ass'n.* 1690, 1690 (2002); J.P. Graham et al, *Growth Promoting Antibiotics in Food Animal Production: An Economic Analysis*, 121 *Public Health Reports* 79, 79 (2006).

¹⁹⁶ 2003 CAFO Rule, 68 Fed. Reg. at 7239.

¹⁹⁷ 40 C.F.R. § 503.13.

Research increasingly demonstrates that CAFO NMPs and other BMPs do not minimize pollution to the degree previously assumed. NMPs are designed to optimize crop yield, by specifying agronomically optimal nutrient goals, and therefore are not designed to minimize runoff to surface and ground water. Even when nutrient management planners have created site-specific nutrient application standards, inaccuracies in estimates of water delivery and utilization by crops and differential nutrient uptake rates by plants limit NMP effectiveness.¹⁹⁸ As a result, the NMP approach alone does not achieve the rates of pollution reduction required by the CWA.

Moreover, while EPA and states have identified certain nutrient management practices known to harm water quality (*see infra*, section B.b.iv), the federal regulations stop short of prohibiting these practices. These shortcomings weaken the efficacy of the CAFO regulatory program, and have resulted in a patchwork of state regulations pertaining to CAFOs with widely varying degrees of effectiveness. While some variation in land application restrictions may be appropriate due to varying climates, soils, crops, and other site-specific characteristics that will affect which practices will best protect water quality, EPA must reduce its reliance on state-based nutrient management planning. A stronger baseline of nationally-applicable standards is needed to make water quality protection, rather than crop yield, the primary consideration of CAFO nutrient management, and to ensure that states do not engage in a regulatory “race to the bottom.”¹⁹⁹

For CAFOs that land apply wastes, the ELGs require states to establish technical standards for nutrient management. Technical standards must address the form, source, amount, timing, and method of application of nutrients on each field, based on a field-specific assessment of the potential for nitrogen and phosphorous transport from the field to waterways.²⁰⁰ These standards are supposed to be calculated to achieve realistic production goals while minimizing nitrogen and phosphorous movement to waters of the U.S.²⁰¹

¹⁹⁸ See, e.g., EPA, *Transport and Fate of Nutrients and Indicator Microorganisms at a Dairy Lagoon Water Application Site: An Assessment of Nutrient Management Plans* 66 (Mar. 2011), <http://nepis.epa.gov/Adobe/PDF/P100DOTV.pdf>.

¹⁹⁹ See, e.g., Stacy Sneeringer & Regina Hogle, *Variation in Environmental Regulations in California and Effects on Dairy Location*, 37 Agric. & Res. Econ. Rev. 133, 135 (2008) (surveying academic articles that have tested and supported the hypothesis that environmental regulations influence the location of dairies).

²⁰⁰ 40 C.F.R. § 412.4(c)(2) (determination of application rates).

²⁰¹ *Id.*; see also Permit Writers’ Manual at 6-12. EPA relies on the NRCS, a branch of USDA, to develop technical standards for nutrient management. See 2003 CAFO Rule, 68 Fed. Reg. at 7209 (allowing permitting authorities to rely on NRCS practice standards to meet required technical standards); 2008 CAFO Rule, 73 Fed. Reg. at 70430 (reiterating that permit applicants may rely on NRCS’ technical guidance for CNMPs to fulfill NMP eligibility requirements).

Research has demonstrated, however, that “just having a NMP does not reduce excess nutrient application nor does it guarantee improvements in water quality.”²⁰² The dual goals, expressed in EPA’s regulations and state technical standards, of maximizing production and minimizing pollution are often incompatible, and when in doubt, state standards typically authorize operators to over-apply animal wastes and other supplements in order to ensure that crops have sufficient nutrients to ensure optimal growth.²⁰³ As one researcher explained, “it cannot be assumed that there is a direct relationship between the soil test calibration for crop response to [nutrients] and surface runoff enrichment potential At what levels should recommendations for [nutrient] application change from being agronomic to environmentally based?”²⁰⁴ Under the current regulations, states have too much discretion in balancing these competing interests.

Nutrient management requirements typically rely on the idea of a nutrient budget, limited either by nitrogen or phosphorous, in order to determine how much animal waste or other fertilizer can be applied to a crop.²⁰⁵ NMPs should consider all nutrient input sources, and compare these to volatilization, mineralization, and plant uptake rates, as well as factors affecting the risk of loss, such as slope, in order to determine the amount of additional nutrients that can be added to a crop.²⁰⁶ After taking all of these factors into account, “nutrient management planners [] assume that if waste is applied in accordance with an NMP, all CAFO contaminants will be taken up, inactivated, retained, or degraded in the root zone, so that surface and groundwater are inherently protected.”²⁰⁷ But while these calculations seek to consider relevant factors and involve some direct measurement of nutrient concentrations, they also rely on assumptions about the movement of water and physical and chemical interactions that may or may not reflect actual conditions.²⁰⁸ As a result, these simplified models of nutrient uptake and transport ultimately fail to achieve environmentally optimal results.

²⁰² R. Shepard, *Nutrient Management Planning: Is it the Answer to Better Management?*, 60 J. Soil and Water Conservation 171, 176 (2005).

²⁰³ USDA, *Nitrogen in Agricultural Systems: Implications for Conservation Policy* 4, 46 (Sept. 2011), https://www.ers.usda.gov/webdocs/publications/err127/6767_err127.pdf?v=41056 (describing simultaneous environmental and economic optimization of nitrogen management as “a juggling act” and noting that reducing application rates may increase farmers’ perceived risk of reduced yields); Robert Flynn, *Regulatory vs Agronomic Protection of Groundwater in New Mexico: A Case Study in Nutrient Management* 6 Western Nutrient Mgmt. Conference 165, 168 (2005) (noting that farmers “are not likely to allow crops to become deficient in nitrogen”); Andrew Sharpley, *Agricultural Phosphorous, Water Quality, and Poultry Production: Are They Compatible?* 78 Poultry Sci. 660, 668 (1999) (noting the importance of measuring the phosphorus content of both manure to be applied and that is already in the soil because “there is a tendency among farmers and their advisors to underestimate the fertilizer value of manure without these determinations.”).

²⁰⁴ Andrew Sharpley, *Agricultural Phosphorous, Water Quality, and Poultry Production: Are They Compatible?* at 668.

²⁰⁵ EPA, *Transport and Fate of Nutrients and Indicator Microorganisms at a Dairy Lagoon Water Application Site: An Assessment of Nutrient Management Plans* at 5.

²⁰⁶ *Id.*

²⁰⁷ *Id.* at 7.

²⁰⁸ *Id.*

Current nutrient management planning approaches also often allow over-application of phosphorus. Because most crops require more nitrogen than phosphorous, nitrogen-based approaches to manure application are more common than phosphorus-based.²⁰⁹ This “presents a special problem because the N-to-P ratio in manures is lower than that needed by crops . . . [causing] excess P [to] build[] up to environmentally harmful levels in fields that received repeated applications.”²¹⁰ EPA has come to similar conclusions when considering liquid dairy waste:

“[A] potential problem arises when the relative content of nitrogen and phosphorous in lagoon water differs from that in the crop. In this case, NMPs that are designed to meet the nitrogen requirement for crops may result in the over-application of phosphorous.”²¹¹

Other studies, including those looking at dry litter systems, echo this problem, finding that “[b]ecause most NMPs are based on plant N requirements, this invariably means that P is over-applied relative to needs.”²¹² Once excess phosphorous in soil reaches a particular saturation point, it begins to leach into surface and groundwater.²¹³ Some states do require that NMPs include phosphorus-based plans under certain circumstances.²¹⁴ Nonetheless, these approaches are highly variable, and recent studies demonstrate that phosphorous is often over-applied with respect to crop needs even in states with phosphorus-based plans. A 2014 report by the Environmental Integrity Project found, for example, that 75% of phosphorous from poultry operations on Maryland’s Eastern Shore was applied in excess of crop needs.²¹⁵

EPA’s regulations should account for the modeling and design deficiencies that undermine the effectiveness of NMPs, rather than assuming that optimizing crop yield will also

²⁰⁹ University of Georgia Cooperative Extension, *Small Farm Nutrient Management Primer: For Un-permitted Animal Feeding Operations* 4-6 (Jan. 2006), http://extension.uga.edu/publications/files/pdf/B%201293_5.PDF; L.M. Risse, et al., *Land Application of Manure for Beneficial Reuse* at ii.

²¹⁰ L.M. Risse, et al., *Land Application of Manure for Beneficial Reuse* at ii.

²¹¹ EPA, *Transport and Fate of Nutrients and Indicator Microorganisms at a Dairy Lagoon Water Application Site: An Assessment of Nutrient Management Plans* at 8. See also University of Georgia Cooperative Extension, *Small Farm Nutrient Management Primer: For Un-permitted Animal Feeding Operations* at 4-6; Risse, et al., *Land Application of Manure for Beneficial Reuse* at 18 (“Nutrients applied from animal manure should match the needs of the crop, but the ratios of N, P, K, and the various micro nutrients excreted by animals are generally different from crop requirements.”).

²¹² University of Kentucky Research Foundation, *Demonstration of Enhanced Technologies for Land Application of Animal Nutrient Sources in Sensitive Watersheds: Final Progress Report 2* (2008), http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044927.pdf.

²¹³ Chesapeake Bay Foundation, *Manure’s Impacts on Rivers, Streams, and the Chesapeake Bay* 8 (July 28, 2004), <http://www.cbf.org/document.doc?id=137>.

²¹⁴ *Id.* at 8-9 (noting that Virginia, Delaware, Pennsylvania, and Maryland all require that NMPs account for crop phosphorus needs to some extent).

²¹⁵ Environmental Integrity Project, *Manure Overload on Maryland’s Eastern Shore* 8 (Dec. 8, 2014), http://dcpgonline.org/uploads/EIP_POULTRY-REPORT_-_Manure_Overload.pdf.

“minimize nitrogen and phosphorous movement to waters of the U.S.”²¹⁶ At a minimum, EPA must expressly require the use of phosphorous-based plans, rather than nitrogen-based plans, where phosphorus is the limiting nutrient. However, even phosphorus-based plans fail to minimize the over-application of harmful manure constituents like *E. coli* and other pollutants, and EPA must commit to regularly strengthening CAFO nutrient management requirements as the science develops, including by analyzing the results of the requested land application monitoring data discussed *supra*. Put simply, the CWA mandates that EPA and states tip the scales in favor of water quality protection, not crop yield, requiring appropriate technology-based effluent limitations as mandated by the Act. The current NMP regulations fail to do so.

Stronger NMP regulations are also necessary to effectuate the Act’s requirements that permits include stricter limits as needed to comply with water quality standards²¹⁷ and that permitting authorities may not issue a NPDES permit to a newly constructed or modified facility if discharges from that facility would cause or contribute to the violation of water quality standards.²¹⁸ Of course, the current permitting scheme discourages CAFO operators from obtaining permits in the first place, and as a result undermines the Act’s mandate to protect water quality through more stringent permits when technology-based permits do not suffice. But even where CAFOs are required to obtain NPDES permits, the legal fiction that NMPs designed to maximize crop yield will also achieve minimal or zero discharge makes it unlikely that a permit writer will seek to establish more stringent requirements when a receiving water is impaired or the CAFO may cause or contribute to a violation of water quality standards.

Even in the case of land application, where EPA’s ELGs merely require a few BMPs in addition to the NMP, there is nothing in EPA’s rules to enable a permit writer to derive practices sufficiently protective to reduce loadings and ensure the discharge will not cause or contribute to water quality standards violations. Because many discharges under this scheme are assumed to be non-existent or not subject to regulation, and NMPs are already assumed to minimize the potential for runoff, there is no mechanism for permit writers to establish water quality-based permit limits where a receiving water is already impaired. Absent effective regulations that reflect the reality that NMPs are not zero discharge plans and that require discharging CAFOs to obtain permits in the first place, permitting authorities will continue failing to impose WQBELs to protect the uses of individual waterbodies.

²¹⁶ See 40 C.F.R. 412.4(c)(2).

²¹⁷ See 33 U.S.C. § 1311(b)(1)(C) (NPDES permits must include “any more stringent limitations . . . necessary to meet water quality standards”); 40 C.F.R. § 122.44(d) (permitting authorities must include WQBELs for pollutants that “have the reasonable potential to cause, or contribute to an excursion above any State water quality standard”).

²¹⁸ See 40 C.F.R. § 122.4(i). See also *Friends of Pinto Creek v. EPA*, 504 F.3d 1007, 1014 (9th Cir. 2007).

iv. Technical Standards Must Prohibit Practices Known to Harm Water Quality

As written, EPA's ELGs for Large CAFOs allow CAFO operators to engage in several production and land application area practices known to cause discharges and harm water quality, undermining permits' narrative requirements to eliminate or minimize discharges, respectively. EPA's failure to promulgate CAFO technical standards that prohibit harmful practices is arbitrary and capricious, and contrary to EPA's obligations to develop guidelines sufficient to protect water quality and make progress towards the Act's goal of eliminating pollution.

The CAFO industry has grown and consolidated significantly since EPA conducted its BPT, BCT, BAT, and NSPS analyses for the CAFO ELGs, and its considerations of both the availability of better technologies and the industry's ability to afford certain practices has become outdated. EPA also knows far more now about the impacts of certain CAFO practices than it did in 2003, and should revisit the appropriateness of its current requirements and prohibitions. Moreover, EPA's prior analysis gave outsized consideration to the economic affordability factor; the mounting evidence that the existing ELGs cannot adequately control CAFO pollution, rendering EPA incapable of meeting its CWA obligations, dictates that the agency must reconsider its analysis with a greater focus on achieving acceptable water quality outcomes. Under such an updated and appropriately balanced analysis, the Petitioners believe that the proposed revisions are affordable for the industry as a whole and are appropriate for both new and existing CAFOs. Petitioners specifically request that EPA supplement the requirements of 40 C.F.R. § 412.4 (Best management practices for land application of manure, litter, and process wastewater) to prohibit the practices discussed below.

1. Manure Storage in Unlined and Inadequately Lined Lagoons and Impoundments

Studies have documented the fact that storage of manure in unlined lagoons and impoundments pollutes surface waters through hydrologic discharges,²¹⁹ and there is sufficient evidence to support a CAFO ELG provision that prohibits storage of manure and other animal wastes in lagoons without impermeable synthetic liners. While groundwater is not regulated as a

²¹⁹ See, e.g., S. Koike, et al., *Monitoring and Source Tracking of Tetracycline Resistance Genes in Lagoons and Groundwater Adjacent to Swine Production Facilities over a 3-Year Period*, 73 Applied Envtl. Microbiology 4813, 4822 (2007) (noting that animal waste seepage from unlined lagoons at two swine CAFOs was associated with the spread of antibiotic resistance genes in bacteria found in groundwater near the facilities); Shai Arnon, et al., *Transport of Testosterone and Estrogen from Dairy-Farm Waste Lagoons to Groundwater*, 42 Envtl. Sci. & Tech. 5521, 5525 (2008) (concluding that clay lining of lagoons "cannot efficiently protect the groundwater environment from waste lagoon leachates under long-term exposure," where a study demonstrated potential seepage of hormones and inorganic contaminants from CAFO waste lagoons to deep groundwater, even where thick layer of clay was present).

water of the U.S., pollution of groundwater often leads to pollution discharges into jurisdictional surface waters through hydrologic connections. As discussed *supra*, such hydrologic discharges of groundwater to jurisdictional waterways are so prevalent that EPA has previously proposed establishing a presumption that CAFO lagoon discharges to groundwater will have a hydrologic connection to surface waters.²²⁰

The current CAFO rules essentially ignore this discharge pathway, and put the burden on citizens to demonstrate that a CAFO waste structure will cause a jurisdictional discharge. In its Permit Writers' Manual, EPA does recommend that Large CAFOs near a waterbody listed "as impaired due to nutrients, dissolved oxygen or bacteria," or in areas where there is a "reasonable potential" that anticipated discharges will violate water quality standards, should use more protective practices like "installing an impermeable lining in a lagoon or storage pond."²²¹ This effectively presumes that such facilities will discharge via their lagoons in the absence of effective liners. However, the water pollution risks from unlined lagoons indicate that a mere recommendation is insufficient. EPA must prohibit this practice in order for permitted CAFOs to actually achieve the technology-based standards of zero production area discharges in most weather conditions.

Historically, CAFO operators have not been required to line waste storage impoundments because of the belief that the animal wastes themselves create a protective lining. A recent literature review of lagoon leaching studies demonstrates, however, that leaching rates are highly variable and dependent on site-specific factors such as soil type.²²² Moreover, even where lagoons are lined with soil containing at least 10% clay, "significant leaching can occur through shrink-swell fractures in lagoon sidewalls."²²³ In contrast, "[p]roperly constructed and maintained, synthetic liner systems provide excellent protection from groundwater degradation."²²⁴ In short, "synthetic liners can protect groundwater quality, while other liners require substantial post-construction monitoring."²²⁵

Given current research on the effectiveness of synthetic lagoon liners, and in keeping with the requirement that EPA develop standards which reflect best available technology economically achievable, EPA must directly address hydrologic discharges by imposing technical standards that require the use of the best available synthetic liners at all existing and new waste lagoons. NRCS has extensively analyzed the seepage rates of different liner materials

²²⁰ 2001 Proposed CAFO Rule, 66 Fed. Reg. at 3040. Although such a presumption of hydrologic connection is not necessary to impose this BMP requirement on permitted CAFOs, EPA should nonetheless revisit this analysis to provide further evidence in support of a more general presumption of discharge by CAFOs or categories of CAFOs.

²²¹ Permit Writers' Manual at 4-36.

²²² Thomas Harter, et al., *Assessing Potential Impacts of Livestock Management on Groundwater*, Nicholas Institute for Environmental Policy Solutions 6 (Mar. 2014), http://nicholasinstitute.duke.edu/sites/default/files/ni_r_14-03_sr2_final.pdf (noting studies had found high leaching rates where unlined lagoons were built on sandy or gravelly soils).

²²³ *Id.*

²²⁴ *Id.*

²²⁵ *Id.*

and the other factors that affect manure storage system discharges to groundwater, as well as their relative costs, and EPA should use this information and other recent research in deriving its technology standards.²²⁶

2. Ventilation of Pollutants near Waters or Conduits to Waters of the U.S.

EPA should further amend the CAFO ELGs to address pollution discharges from livestock confinement ventilation systems near waterways, ditches, or other conduits that carry pollutants to waters of the U.S. Ventilated animal houses may release significant quantities of ammonia, feathers, dust, and other pollutants. Where houses are located near waterways, these pollutants can re-deposit directly to surface waters, and where CAFO facilities contain ditches, pipes, or other conduits to surface waters, they can carry ventilated pollutants directly to waterways. The current ELGs do not account for these pollution pathways, despite the fact that EPA has affirmed that discharges of CAFO ventilation system pollutants into jurisdictional waters, or conduits to such waters, constitute prohibited point source discharges.²²⁷

Ammonia gas that is intentionally vented out of livestock houses provides a concrete example of how significant this uncontrolled pollution pathway can be. According to the Chesapeake Bay TMDL, atmospheric sources of nitrogen contribute roughly one-third of the total nitrogen load to the Chesapeake Bay.²²⁸ In 2010, EPA projected that between 2010 and 2020, roughly half of the atmospheric nitrogen depositing in the Chesapeake Bay watershed was ammonia.²²⁹ In other words, roughly 17% of the enormous nitrogen load currently impairing the Chesapeake Bay comes from atmospheric ammonia. Much of this atmospheric ammonia comes from CAFOs: according to the most recent EPA National Emissions Inventory, 55% of national ammonia emissions come from livestock waste.²³⁰ In areas where CAFOs are concentrated, this proportion is higher. In Maryland, for example, 74% of ammonia emissions come from livestock waste.²³¹ In short, the emissions of ammonia from CAFOs, including emissions from livestock

²²⁶ See NRCS, Agricultural Waste Management Field Handbook Chapter 10, Appendices 10D and 10E (Aug. 2009), <http://www.wcc.nrcs.usda.gov/ftpref/wntsc/AWM/handbook/ch10.pdf>; NRCS Conservation Practice Standard 521A, Pond Sealing or Lining—Flexible Membrane (Sept. 2011), https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1046899.pdf.

²²⁷ See *Nat'l Pork Producers Council*, 635 F.3d at 754-56; see also *Rose Acre Farms, Inc. v. N.C. Dep't of Env't and Natural Res.*, No. 12-CVS-10, ¶¶ 54, 55 (Jan. 4, 2013) (finding that ammonia and other pollutants that reach jurisdictional waters after being expelled by CAFO ventilation fans are subject to NPDES permitting requirements, and are not exempt as agricultural stormwater).

²²⁸ EPA, Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorus and Sediment 4-33 (Dec. 29, 2010), <https://www.epa.gov/chesapeake-bay-tmdl/chesapeake-bay-tmdl-document>.

²²⁹ *Id.* at Appendix L, Table L3.

²³⁰ EPA, 2011 National Emissions Inventory, <https://www.epa.gov/air-emissions-inventories/2011-national-emissions-inventory-nei-data>.

²³¹ *Id.*

confinement ventilation systems, are directly and substantially contributing to the ongoing impairment of the Chesapeake Bay. This is not a trivial pollution pathway.

The current Large CAFO ELGs ostensibly require existing CAFOs and new dairy and cattle CAFOs to meet a zero discharge standard for the production area, except in the case of a 25-year, 24-hour storm event, and require new hog and poultry CAFOs to achieve a zero discharge production area standard regardless of storm events.²³² However, many CAFOs fail to achieve these requirements in practice, due to the regulations’—and in turn, state permitting agencies’—failure to specifically address ventilation system pollution emissions that become discharges. EPA should require all CAFOs using ventilation systems to either prevent pollutant releases with biofilters or other existing technology, or to capture all ventilated pollution and divert it into the waste containment area to prevent any prohibited discharges of manure, litter, or process wastewater pollutants. To the extent that EPA finds that these technologies cannot eliminate all ventilation system discharges, which is particularly a concern for ammonia, such a finding would only bolster this Petition’s argument that CAFOs do in fact discharge, and that a presumption of discharge is necessary to carry out the Act.

3. Application on Frozen, Saturated, or Snow-Covered Ground

EPA and other agencies recognize that spreading manure on frozen, snow-covered, or saturated ground results in high risk of runoff and pollutant transport. In the NPDES Permit Writers’ Manual for CAFOs, EPA says that state programs “should either prohibit application of manure and process wastewater on snow, ice, and frozen ground, or include specific protocols that CAFO owners or operators . . . will use to conclude whether application to a frozen or snow—or ice—covered field (or a portion thereof) poses a reasonable risk of runoff.”²³³ Similarly, NRCS, EPA’s primary resource for developing technical standards,²³⁴ advises that “[n]utrients must not be surface-applied if nutrient losses offsite are likely” and warns against spreading on “frozen and/or snow-covered soils, and when the top 2 inches of soil are saturated from rainfall or snow melt.”²³⁵ But rather than prohibiting these dangerous practices, EPA merely “strongly encourages” states to adopt such prohibitions themselves.²³⁶ This recommendation has proven inadequate.

The increased likelihood of runoff associated with application of manure to frozen, saturated, or snow-covered ground is widely recognized by agricultural experts, including

²³² 40 C.F.R. § 412.

²³³ Permit Writers’ Manual at 6-15.

²³⁴ USDA and EPA, *Unified National Strategy for Animal Feeding Operations* Sec. 3.2 (March 9, 1990), <http://www.epa.gov/npdes/pubs/finafost.pdf>.

²³⁵ NRCS Conservation Practice Standard 590, Nutrient Management 3 (Oct. 2013), https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1192371.pdf.

²³⁶ Permit Writers’ Manual at 6-16. *See also id.* at 5-30 (listing standards, including prohibiting application of manure to frozen or snow-covered ground, which permit authorities “may include” as technology-based standards).

agricultural extension program technical staff, state agencies, and EPA itself. Liquid or semi-liquid manure cannot easily permeate ground that is already saturated or that is frozen, and thus is much more likely to run off into nearby waterways, particularly when snow or frozen ground begins to melt.²³⁷ Moreover, in areas where soils reach freezing temperatures, there are generally no winter crops available to uptake the nutrients in manure, meaning there is little to no agronomic benefit to winter applications and nutrients are susceptible to loss before any spring crop has been planted.²³⁸ EPA's own peer-reviewed technical guidance similarly concludes that "[f]rom the dual perspectives of nutrient utilization and pollution prevention, [] winter is the least desirable time for land application."²³⁹

Other authorities, ranging from the state level to international, have also recognized the harms likely to result from land application in winter months and on frozen ground. The International Joint Commission, an international organization created by the Boundary Waters Treaty (ratified by the United States and Canada in 1909), recommends that to protect Lake Erie, all adjacent states should ban the spreading of manure on frozen or snow-covered ground because of the likelihood of those practices polluting surface waters.²⁴⁰ The Iowa State University Extension acknowledges that "[b]roadcasting manure onto frozen, snow-covered, water-saturated soils increases the potential for nutrient losses with rainfall or snowmelt runoff to surface water systems."²⁴¹ Similarly, the Penn State Extension warns that "winter is not the best time to apply manure and should be our last choice,"²⁴² and the Ohio State University Extension advises that "[w]inter application should not be part of a manure management plan and it should only be viewed as a last resort."²⁴³

²³⁷ International Joint Commission, *A Balanced Diet for Lake Erie: Reducing Phosphorous Loadings and Harmful Algal Blooms* 75 (2014) [hereinafter 2014 IJC Report],

<http://www.ijc.org/files/publications/2014%20IJC%20LEEP%20REPORT.pdf>.

²³⁸ Ontario Ministry of Agriculture, Food, and Rural Affairs, *Winter Application of Manure and Other Agricultural Source Material*, OMAFRA Fact Sheet 10-073 (Sept. 2010),

<http://www.omafra.gov.on.ca/english/engineer/facts/10-073.htm#5>. Similarly, in a PowerPoint presentation derived from a white paper prepared for EPA by contract company Tetra Tech, Tetra Tech noted that a "comprehensive literature review found no published research to support agronomic factors as a basis for recommending winter manure application." Tetra Tech, *Winter Manure Application and Water Quality: Overview of the Literature* 4 (Oct. 30, 2014), <http://bloximages.chicago2.vip.townnews.com/auburnpub.com/content/tncms/assets/v3/editorial/f/ef/ef9f5a8-8a50-53b9-a377-eaf2a11a9362/5483213e3e237.pdf.pdf>.

²³⁹ Permit Writers' Manual at App. G-1-2, *Interim Final Technical Guidance for the Application of CAFO Manure on Land in the Winter* (noting that "[w]here there is a reasonable risk [of runoff from application on snow, ice, and frozen soil], EPA strongly prefers that technical standards prohibit application on the field or the pertinent portion thereof during times that the risk exists or may arise").

²⁴⁰ 2014 IJC Report at 9.

²⁴¹ Iowa State Univ. Extension and Outreach, *Using Manure Nutrients for Crop Production* 6 (May 2016), http://lib.dr.iastate.edu/cgi/viewcontent.cgi?article=1089&context=extension_pubs.

²⁴² Penn State Extension, *Winter Manure Application Considerations* (Jan. 2013), <http://extension.psu.edu/plants/crops/news/2013/01/winter-manure-application-considerations>.

²⁴³ Amanda Meddles, Ohio State University Extension, *Properly Applying Manure on Frozen Ground*, Ohio's Country Journal (Jan. 24, 2012), <http://ocj.com/2012/01/properly-applying-manure-on-frozen-ground/>. See also Utah Farmstead Assessment for Ground Water and Surface Water Protection, *How to Manage Stored Manure and*

Despite the broad consensus on the dangers of winter application practices, however, many states with numerous CAFOs and severe winter conditions fail to prohibit such practices in their NPDES implementing regulations.²⁴⁴ Absent a national prohibition on such irresponsible manure application practices, many operators will fail to maintain adequate storage to avoid winter application, will continue to land apply waste under high-risk conditions, and will continue to adversely impact surface water quality through preventable land application discharges. Moreover, climate change heightens the risk that applying waste under these circumstances poses to water quality. State regulators have understood for more than a decade that intermittent melting spells increase the risk of surface runoff.²⁴⁵ In regions where the ground once predictably stayed frozen for the entire winter, but where such intermittent melting is now a more frequent occurrence, the relationship between season and runoff potential has changed. EPA should re-evaluate this relationship with recent data, because assumptions about winter runoff potential are likely no longer accurate.²⁴⁶

EPA must strengthen the CAFO ELGs to prohibit the spreading of manure on frozen, saturated, or snow-covered ground, or during periods of crop dormancy when such conditions are expected to occur before crop nutrient uptake occurs, because manure application under these conditions is known to lead to surface water discharges, and is therefore inconsistent with the requirement that land application be conducted in such a way that minimizes the risk of nutrient loss. In conjunction with this requirement, EPA must require adequate storage to ensure that operators may not simply dump excess stored manure on fields each spring, as that would also lead to unacceptable risk of pollution runoff. The technology to prevent these land application discharges is clearly available, and anything short of such a prohibition will continue to allow irresponsible manure disposal, rather than application calculated to best protect water quality, and fall short of what the CWA requires.

Protect Your Water 7 (Rev'd Mar. 2012), <http://extension.usu.edu/files/publications/factsheet/WQFA-13.pdf> (advising on proper manure handling and storage for water protection, and directing that “[m]anure should not be applied to frozen or snow covered ground unless all runoff can be controlled.”); Ohio Dep’t of Agric., Ohio Dep’t of Natural Res., Ohio Env’tl. Prot. Agency, Lake Erie Comm’n, *Ohio Lake Erie Phosphorus Task Force II Final Report* 51 (Nov. 2013), http://lakeerie.ohio.gov/portals/0/reports/task_force_report_october_2013.pdf.

²⁴⁴ See, e.g., Wis. Dep’t of Natural Res., WPDES Permit No. WI-0063274-01: Large Dairy CAFO General Permit 3.7.4-3.7.7 (Apr. 4, 2011), <http://dnr.wi.gov/topic/AgBusiness/documents/LargeDairyCAFOGP-WPDESPermit.pdf> (allowing for liquid and solid manure application on frozen and snow-covered ground under various circumstances) [hereinafter Wis. CAFO Permit]; Ill. Env’tl. Prot. Agency, *Considerations for Manure Application Setbacks* 2, <http://www.epa.state.il.us/water/permits/cafo/documents/show/602> (providing that application to snow-covered soils is “not recommended” but may be permitted in order to address waste storage concerns); Sierra Club Michigan Chapter, *Why are CAFOs Bad?*, <http://www.sierraclub.org/michigan/why-are-cafos-bad> (noting that Michigan CAFOs may be permitted, either through their NMP or under an order from the state with specifications for winter application, to apply waste to snow or frozen ground).

²⁴⁵ See, e.g., Gregg Hoffmann, *Wintertime manure spreading under scrutiny*, WisBusiness (Apr. 7, 2005), <http://www.wisbusiness.com/index.iml?Article=34685>.

²⁴⁶ 2014 IJC Report at 78.

4. Spray Irrigation of Manure

The CAFO ELGs should also expressly prohibit all methods of spray irrigation of manure, which threaten surface waters and present significant human health risks. Some of the unique water quality risks associated with spray irrigation relate to the fact that irrigation often takes place at night, center-pivot irrigation may occur without supervision, excessive irrigation can result in waste ponding, and dry weather discharges can occur via drift, surface runoff, and leaching.²⁴⁷ Over-application via spray irrigation has been cited as a cause of water pollution in states where CAFOs use this application method.²⁴⁸ Irrigation systems are also reliant on pipes and hoses to connect lagoons with sprayfields, and these can leak or break.²⁴⁹

Compared to other forms of irrigation, spray irrigation may also result in higher rates of evaporation and volatilization of a range of CAFO pollutants, including ammonia.²⁵⁰ Indeed, several studies have found that where manure is not incorporated into soil, more than half of the manure ammonia is lost, likely due to volatilization.²⁵¹ This directly impacts water quality, because volatilized ammonia will re-deposit on land and water, where, as we have seen in the context of the Chesapeake Bay, it contributes to algae blooms and dead zones. In addition, spraying methods may result in liquid manure droplets drifting onto neighboring properties, roads, and other areas, where it can subsequently run off into waterways.²⁵² Spray irrigation is simply incompatible with the goal of agronomic use of manure nutrients, as well as with the CWA's requirements to limit and ultimately eliminate CAFO discharges to waters of the U.S.

Spray irrigation of waste also threatens public health, because it “create[s] a potentially hazardous situation as pathogens may become aerosolized and transported to downwind receptors [and] . . . could potentially be directly inhaled or ingested after they land on fomites, water sources, or food crops.”²⁵³ These bioaerosols can contain bacteria, viruses, parasites, fungi,

²⁴⁷ See, e.g., Wis. Manure Irrigation Workgroup, *Considerations for the Use of Manure Irrigation Practices* 40-42 (Apr. 2016), <https://fyi.uwex.edu/manureirrigation/files/2016/04/Manure-Irrigation-Workgroup-Report-2016.pdf>.

²⁴⁸ See, e.g., Ron Seely, Wisconsin Watch, *Manure Spraying Under Scrutiny* (Apr. 27, 2014), <http://wisconsinwatch.org/2014/04/manure-spraying-under-scrutiny/>.

²⁴⁹ NRDC, *Cesspools of Shame: How Factory Farm Lagoons and Sprayfields Threaten Environmental and Public Health* 29 (Jul. 2001) [hereinafter *Cesspools of Shame*], <http://www.nrdc.org/water/pollution/cesspools/cesspools.pdf>.

²⁵⁰ *Id.* at 17; Iowa State Univ. Extension and Outreach, *Using Manure Nutrients for Crop Production* Table 2 (showing that spray irrigation has the highest volatilization rate of various application practices).

²⁵¹ *Cesspools of Shame* at 37.

²⁵² Penn State Extension, *Irrigation of Liquid Manures*, <http://extension.psu.edu/plants/nutrient-management/educational/manure-storage-and-handling/irrigation-of-liquid-manures>.

²⁵³ R.S. Dungan, *Board-Invited Review: Fate and Transport of Bioaerosols Associated with Livestock Operations and Manures*, 88 J. Animal Sci. 3693, 3696, 3702 (2010), <https://www.animalsciencepublications.org/publications/jas/pdfs/88/11/3693> (noting that spray irrigation methods contribute to the formation of bioaerosols at greater concentrations than found in background environments, and that there is increased potential for exposure to airborne pathogens and microbial by-products both on and off-site of CAFOs as a result of these practices).

and other microbes harmful to human health.²⁵⁴ As the liquid manure is sprayed into the air, the risk of decreased droplet size and longer transport distances increases, as compared to other forms of manure application.²⁵⁵ Because it poses threats to water quality as well as public health, EPA should prohibit spray irrigation methods of manure application in the CAFO ELGs.

5. Manure Application on Steep Slopes

Similarly, EPA cautions against, but fails to prohibit spreading of manure—even liquid manure—on steep slopes.²⁵⁶ Steeply sloped areas often lack soil properties that foster normal plant growth, meaning that it is less likely that nutrients from manure will be fully assimilated by plants, and more likely that these excess nutrients will be transported to surface and ground waters.²⁵⁷ In EPA’s own literature review of academic research relating to livestock and poultry manure impacts, the Agency found land slope to be a key determinant of runoff and of the likelihood of pathogen transport.²⁵⁸ Regulating this activity is clearly practicable, because several states do restrict the spreading, in winter or otherwise, of manure on sloped land above a certain grade.²⁵⁹ Nonetheless, EPA and NRCS currently leave it up to the states to determine what grade is acceptable for manure spreading and what precautions, if any, CAFO owners and operators must take when spreading on sloped land.²⁶⁰ This has resulted in a patchwork of state-based requirements,²⁶¹ indicating that a baseline of nationally applicable restrictions is necessary to protect water quality. For example, Illinois allows operators to apply manure to fields with slopes as high as 15%,²⁶² while Wisconsin does not impose any slope restrictions on manure spreading unless it takes place on frozen or snow-covered ground.²⁶³

EPA’s failure to prohibit spreading on slopes that lead to discharges of nutrients and other pollutants renders permits incapable of achieving the narrative effluent limits in the CAFO ELGs, absent stronger state requirements. EPA has the technical expertise to determine, for various soil and manure types and percentages of solid content, the maximum slope grade

²⁵⁴ See Patricia D. Millner, *Bioaerosols Associated with Animal Production Operations*, 100 Bioresource Tech. 5379, 5379-80 (2009), <https://pubag.nal.usda.gov/pubag/downloadPDF.xhtml?id=33386&content=PDF>.

²⁵⁵ Dungan, *Board-Invited Review: Fate and Transport of Bioaerosols Associated with Livestock Operations and Manures* at 3698-99.

²⁵⁶ Permit Writers’ Manual at 5-30.

²⁵⁷ *Id.* at A-8.

²⁵⁸ EPA Literature Review at 23, 25.

²⁵⁹ State regulations vary widely with respect to restrictions related to land application on steep slopes. See, e.g., Env’tl. Law & Policy Ctr., *Cultivating Clean Water: State-Based Regulation of Agricultural Runoff Pollution* 47-51 (2010) [hereinafter *Cultivating Clean Water*], <http://elpc.org/wp-content/uploads/2010/05/ELPC-Cultivating-Clean-Water-updated-May-5-2010.pdf>.

²⁶⁰ See NRCS Standard 590 at 3, which only mentions slope as a consideration factor when allowing nutrient application despite a likelihood of runoff, such as on frozen, snow-covered, or saturated soils.

²⁶¹ See, e.g., *Cultivating Clean Water* at 47-51.

²⁶² Ill. Env’tl. Prot. Agency, *Considerations for Manure Application* 2, <http://www.epa.state.il.us/water/permits/cafo/documents/show/602>.

²⁶³ Wis. Admin. Code Ch. NR 243.14 (2015); Wis. CAFO Permit at Sec. 3.7.

consistent with the requirement to minimize nutrient loss and other discharges of pollutants. It should determine these and strengthen the ELGs to restrict land application accordingly.

6. Manure Storage in Exposed Stockpiles

Storage of manure in uncovered stockpiles also leads to preventable pollutant discharges to surface waters. EPA advises permit writers that “[i]deally, stockpiled manure and litter should be stored under cover on an impervious surface” to minimize pollutant runoff.²⁶⁴ The EPA Office of Enforcement and Compliance Assurance also recognizes the dangers of this practice, warning that leaving manure in uncovered stockpiles is likely to result in pollutants escaping into the environment.²⁶⁵ Manure stockpiles can contain vast quantities of waste and pollutants; a poultry litter stockpile generally ranges from 75 to 200 tons of waste, and precipitation events can carry pollutants from an uncovered pile to surface and ground water.²⁶⁶

As with the inherently risky practices discussed above, EPA has acknowledged the threat to water quality but has failed to impose appropriate and necessary permit restrictions. While EPA has properly defined stockpiles as part of the CAFO production area,²⁶⁷ it continues to allow states to create loopholes from adequate regulation. For example, Delaware allows CAFOs to stockpile manure on application fields for up to 90 days, using the phrase “field staging” for the practice, and subsequently fails to impose a zero discharge requirement on the piles. This in effect improperly treats discharges from these piles as land application, rather than production area, discharges.²⁶⁸

All exposed stockpiles of litter are most likely to result in discharges of pollutants in the first few days after construction, when nutrients are at their highest levels.²⁶⁹ As a result, even where stockpiles are considered part of the land application area, rather than the production area, they also fail to meet EPA’s land application ELG requirement to “minimiz[e] nitrogen and phosphorus movement to surface waters.”²⁷⁰ Permitting the continued use of uncovered solid waste stockpiles, unless the CAFO operator demonstrates that all runoff and leaching from the piles will be diverted into a waste storage facility, simply fails to meet EPA’s requirement to implement BMPs capable of “ensur[ing] appropriate agricultural utilization” of nutrients.²⁷¹ EPA must give effect to its zero discharge production area requirements for waste stockpiles by

²⁶⁴ Permit Writers’ Manual at 5-39.

²⁶⁵ EPA Office of Enforcement and Compliance Assurance, *EPA Targets Clean Water Act Violations at Livestock Feeding Operations*, 10 Enforcement Alert 1, EPA 325-F-09-001 (2009).

²⁶⁶ Gregory D. Binford and George Malone, Evaluating BMPs for Temporary Stockpiling of Poultry Litter 4 (Dec. 22, 2008), http://mda.maryland.gov/SiteAssets/Pages/Manure/PL_Storage_Report_BINFORD_FINAL.PDF.

²⁶⁷ 40 C.F.R. § 122.23(b)(8).

²⁶⁸ Del. Nutrient Mgmt. Program, Del. Conservation Practice Standard: Temporary Field Staging (Jul. 2010), http://dda.delaware.gov/nutrients/downloads/Draft_TechStandards/Temp_Field_Storage.pdf.

²⁶⁹ Gregory D. Binford and George Malone, Evaluating BMPs for Temporary Stockpiling of Poultry Litter at 12.

²⁷⁰ 40 C.F.R. § 412.4(c)(2)(i).

²⁷¹ 40 C.F.R. § 122.42(e)(1)(viii).

imposing requirements to actually prevent them from discharging. Without a federal BMP specifically mandating stockpile pads and covers for all CAFOs subject to the ELGs, nutrient runoff from manure stockpiles will continue unabated.

v. State Permitting Programs Cannot Effectively Fill the Gaps Left by the Absence of Strong National Standards

Although EPA either discourages the use of these harmful practices or encourages states to prohibit the practice themselves, such suggestions are not adequate stand-ins for effective federal regulation. In a study examining state-based regulation of agricultural pollution, the Environmental Law and Policy Center examined regulatory programs in seven states—California, Delaware, Iowa, Kentucky, Maryland, Oregon, and Wisconsin—and noted that “[t]hus far, no state has demonstrated that measureable water quality improvements have resulted from its regulatory program.”²⁷² State programs often lack adequate resources to fully implement CWA permitting programs for all sources.²⁷³ Documenting violations of BMPs is costly and time consuming, and actions against individual producers often only address small amounts of pollution.²⁷⁴ These deficiencies may lead state agencies to support interpretations of the CWA that minimize the need for regulatory oversight, rather than electing to go beyond federal requirements.²⁷⁵ EPA itself has noted that states have not prioritized regulation of feedlot wastes, and that budgetary constraints make it unlikely that states will meet—much less exceed—program and permitting responsibilities under the current rules.²⁷⁶

The proliferation of “no more stringent than” laws in several states has erected an additional barrier to effective state regulation. Many states have adopted statutes or rules prohibiting administrative bodies from promulgating environmental protections more stringent than federal rules require. A study conducted by the Environmental Law Institute found that 13 states have enacted broad “no more stringent than” laws that prohibit the state from imposing

²⁷² *Cultivating Clean Water* at 11 (primarily examining nitrogen and phosphorous pollution caused by the application of animal waste and chemical fertilizers to land).

²⁷³ Clifford Rechtschaffen, *Enforcing the Clean Water Act in the Twenty-First Century: Harnessing the Power of the Public Spotlight*, Center for Progressive Reform White Paper 7 (Oct. 2004); *Animal Waste and Water Quality* at 18 (“it is unclear how state agencies will find the resources needed to carry out their responsibilities under the revised rules without reducing resources for other important activities”); Terence J. Centner, *Regulating the Land Application of Manure from Animal Production Facilities in the USA*, 14 *Water Policy* 319, 329 (2012) (noting that “[s]tate regulatory agencies do not have the resources to penalize producers who fail to follow BMPs”).

²⁷⁴ Centner, *Regulating the land application of manure from animal production facilities in the USA* at 329.

²⁷⁵ Terence J. Centner, *Challenging NPDES Permits Granted Without Public Participation*, 38 *B.C. Env'tl. Aff. L. Rev.* 1, 10-11 (2011), <http://lawdigitalcommons.bc.edu/ealr/vol38/iss1/2/>.

²⁷⁶ *Animal Waste and Water Quality* at 24; Jillian P. Fry, et al., *Investigating the Role of State Permitting and Agriculture Agencies in Addressing Public Health Concerns Related to Industrial Food Animal Production* at 4 (survey of state policies generated response from a state agency staff member indicating that compliance inspections are only initiated “on a complaint basis” because they “don’t have staff or money”).

more protective requirements than the minimum required by the CWA and federal regulations.²⁷⁷ An additional 23 states have adopted laws that make it more difficult to establish state standards that surpass these minimum federal requirements.²⁷⁸ Consequently, many states are unable to impose additional pollution control measures, even where local conditions may necessitate them to protect water quality. Iowa has even gone so far as to specifically prohibit the state from issuing CAFO NPDES regulations more stringent than required under federal law.²⁷⁹ Even if EPA had intended that states would prohibit many harmful practices on their own, it is unreasonable to expect that this will happen given numerous state laws that prohibit adoption of more protective rules.

vi. EPA's Assumptions Regarding the Frequency of Storm Events Are No Longer Accurate

To meet its obligations under the CWA, EPA must review and update its process for designating precipitation events with a probable recurrence interval to reflect new weather patterns. Large CAFOs are required to maintain waste storage capacity to contain a 25-year, 24-hour storm event.²⁸⁰ EPA determines the likelihood and magnitude of such events based on a 1961 National Weather Service rainfall atlas, known as Technical Paper No. 40 (TP40).²⁸¹ The Department of Commerce published TP40 in 1961 based on 100 years of rainfall data.²⁸² However, more recent research calls into question whether TP40 utilizes the best available techniques and data to determine the magnitude of 25-year, 24-hour storm events. Because certain design standards for CAFOs, such as standards for storage lagoons, are based on the anticipated frequency of major storm events, accurately predicting the likelihood and magnitude of such events is critical to preventing the need for manure application at high-risk times of year, as well as storage facility failures and overflows. A method that underestimates the likelihood or magnitude of precipitation events will mean that CAFO structures are designed to fail and reach capacity more frequently.

Due to changing weather patterns, precipitation events that were rare by 1961 standards may not be so infrequent today. Climate research has demonstrated that precipitation patterns are changing, and many places are experiencing a trend towards increased frequency of extreme

²⁷⁷ Env'tl. Law Inst., *State Constraints: State-Imposed Limitations on the Authority of Agencies to Regulate Waters Beyond the Scope of the Federal Clean Water Act* 1 (2013), <http://www.eli.org/sites/default/files/eli-pubs/d23-04.pdf>.

²⁷⁸ *Id.*

²⁷⁹ *Id.* at 93; Iowa Code 459.311(2).

²⁸⁰ 40 C.F.R. § 412.2(i).

²⁸¹ *Id.*

²⁸² See Dep't of Commerce, Weather Bureau, *Technical Paper No. 40, Rainfall Frequency Atlas of the United States* (1961), http://www.nws.noaa.gov/oh/hdsc/PF_documents/TechnicalPaper_No40.pdf.

precipitation events.²⁸³ The U.S. Global Change Research Program has observed an increase in very heavy precipitation events in every region of the country except Hawaii.²⁸⁴ The Program found that “[t]here is a clear national trend toward a greater amount of precipitation being concentrated in very heavy events”²⁸⁵ EPA has recognized this as well, stating “[t]he amount of rain falling in heavy precipitation events is likely to increase in most regions”²⁸⁶ Larger and more frequent storm events mean that the current ELGs will likely be insufficient to prevent catastrophic failures, such as breached and overflowing waste lagoons.

Numerous studies indicate that newer, more accurate climate data are available to inform weather-based design standards.²⁸⁷ For example, in 1992 the Midwestern Climate Center, part of the National Weather Service, in conjunction with the Illinois State Water Survey, released a Rainfall Frequency Atlas of the Midwest.²⁸⁸ The study aimed to update TP40, which, even in 1992, was considered too old to be reliable.²⁸⁹ New findings indicated that climate trends since TP40 changed precipitation patterns in the Midwest, and the study authors determined that TP40 did not provide sufficiently detailed spatial analysis for variations in rainfall amounts for given durations and recurrence intervals.²⁹⁰

The Southern Regional Climate Center at Louisiana State University created a Rainfall Frequency/Magnitude Atlas for the South-Central United States in 1997 for similar reasons.²⁹¹ The primary rationale for that analysis was that “[t]he rainfall frequency and magnitude patterns illustrated in TP40 need to be reexamined” in light of new data and global climate change. In addition, data limitations at the time of TP40’s publication were thought to have resulted in an overgeneralized analysis of rainfall events. The authors cite specific findings that demonstrate TP40’s inaccuracy, such as research indicating that “the 24-hour, 100-year value from TP40 was exceeded 3 times more often than expected in Michigan,” and that both Wisconsin and Illinois had almost double the number of 100-year, 24-hour rain events that TP40 anticipates.²⁹² For 24-hour rainfall events, the study indicated storms may be three inches greater than TP40 predicts in

²⁸³ See, e.g. Jerry Melillo, et al., Eds., 2014: *Climate Change Impacts in the United States: The Third National Climate Assessment*, U.S. Global Change Research Program 9 (Rev’d Oct. 2014), <http://nca2014.globalchange.gov/downloads>.

²⁸⁴ *Id.*

²⁸⁵ *Id.*

²⁸⁶ EPA, Climate Change Science: Future of Climate Change, <https://www.epa.gov/climate-change-science/future-climate-change> (last accessed Jan. 13, 2017).

²⁸⁷ NOAA, an agency within the Department of Commerce, also maintains more recent data sources about precipitation frequency by location. See Nat’l Oceanic and Atmospheric Admin., Precipitation Frequency Data Server, <http://hdsc.nws.noaa.gov/hdsc/pfds/> (last accessed Jan. 13, 2017).

²⁸⁸ Floyd A. Huff and James R. Angel, III, State Water Survey, Bulletin 71, *Rainfall Frequency Atlas of the Midwest* (1992), https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs141p2_024033.pdf.

²⁸⁹ *Id.* at 1.

²⁹⁰ *Id.*

²⁹¹ Gregory E. Faiers, et al., La. State Univ. S. Reg’l Climate Ctr., *Rainfall Frequency Magnitude/Atlas for the South-Central United States*, SRCC Technical Report 97-1 (1997), http://www.losc.lsu.edu/tech97_2.pdf.

²⁹² *Id.* at 1.

some regions.²⁹³ EPA must revise its ELGs to require permitting agencies to use the most up-to-date rainfall data available, to ensure that design standards accurately reflect anticipated weather events.

III. CONCLUSION

Decades after passage of the CWA, CAFOs remain a significant—and substantially unregulated—source of water pollution throughout the United States. EPA’s recent efforts at imposing a workable NPDES permitting scheme for the industry have failed on two major fronts: requiring permits of all CAFOs that discharge, and requiring adequate safeguards in the relatively small number of permits issued. Petitioners are aware of the unique challenges in regulating CAFO discharges. However, courts have repeatedly established that “this ambitious statute is not hospitable to the concept that the appropriate response to a difficult pollution problem is not to try at all.”²⁹⁴ EPA has significant authority to revise its approach and strengthen its oversight of industrial livestock pollution, and Petitioners believe that EPA has an obligation pursuant to its CWA duties to do so without further delay.

²⁹³ *Id.* at 7.

²⁹⁴ *NW Envtl. Advocates v. EPA*, 537 F.3d 1006, 1026 (9th Cir. 2008), quoting *NRDC v. Costle*, 568 F.2d 1369, 1380 (D.C. Cir. 1977); see also *Union Elec. Co. v. EPA*, 427 U.S. 246, 268-69 (1976) (“Allowing such [feasibility] claims to be raised . . . would frustrate congressional intent.”).

Appendix B

| | | | | | | | | | | | |
|---------|------|----------|--------------|-------|---------------|---------------|-----------|--------------|--------------------|--------------------|---------|
| Program | Year | Period | Geo Level | State | State ANSI | shed_ code | Commodity | Data Item | Domain Category | Domain Category | Value |
| | | | | | | | | CATTLE, | | | |
| | | FIRST OF | | | | | | COWS, MILK - | NOT | | |
| SURVEY | 2019 | JAN | STATE | IDAHO | 16 | 0 | CATTLE | INVENTORY | TOTAL | SPECIFIED | 614,000 |

Appendix C

From: Socha, Julianne
To: Sylvia Heaton; McMahon, Megan (DEQ)
Cc: Thompson, Caitlain; Ackerman, Mark; Schaller, Andrea
Subject: MIG010000 - EPA preliminary review comments on pre-public notice draft general permit for CAFOs
Date: Wednesday, September 25, 2019 2:43:00 PM

Hi Sylvia and Megan –

In response to our email exchange on September 24 I am providing preliminary review comments on the PPN draft GP for CAFOs. I have reviewed the pre-public notice draft NPDES General Permit for CAFOs (referred to in the comments below as “the Permit” or “this Permit”), draft fact sheet, and draft public notice, that was submitted to EPA on August 23, 2019. Based on my review and discussions between EGLE and Region 5 held on September 5, September 17 and September 18, 2019, below are Region 5’s preliminary comments on the pre-public notice draft GP, draft fact sheet, and draft public notice.

As these are preliminary comments, EPA does intend to review subsequent versions of the Permit to assess how these comments were considered and addressed by the State.

As we discussed on September 5 and 17, I would also like to review templates for forms and reports that are specifically required by the permit. Since all templates for forms and reports are not currently available, on September 17 you shared an Excel spreadsheet listing forms and required submissions in the Permit. Upon availability or by the start of the public notice of the Draft Permit please provide either a pdf file or a website link for the following forms and required submissions identified on the September 17 Excel spreadsheet for EPA review:

- CAFO Inspection Report required in Part I.B.1.c.;
- Notification of New Field Requests;
- Daily Manure Land Application Record required in Part I.B.3.d.1.;
- Land Application summary for Previous Crop Year required in Part I.B.3.d.2.;
- CNMP Template;
- Annual Report Form for CAFOs required by Part I.B.4.d.;
- CNMP Update Form;
- CAFO Discharge Monitoring Report required in Part I.C.1.; and
- Manifest for CAFO Waste required by Part I.C.9.a..

Let me know if you have any questions regarding these preliminary comments. I would like to suggest that we schedule a time prior to the public notice of a Draft Permit to discuss any revisions EGLE plans to make or has made to the Permit in response to these preliminary comments. I look forward to working with you to resolve any issues regarding these preliminary comments.

Preliminary Comments on the pre-public notice permit:

1. 40 C.F.R. § 122.23(b)(8) and Section 323.2104(d) of Part 21 of the Michigan Administrative Code define “production area” to mean the part of an animal feeding operation that includes the animal confinement area, the manure storage area, the raw materials storage area, and the waste containment areas. Both the federal and state definition further define “raw materials storage area” to include feed silos, silage bunkers, and bedding materials. Part II.A. of the Permit includes a definition of production area which does not conform to the definitions established in federal and state rules. The Permit excludes storage of sand that will be used as bedding from the raw materials storage area. Additionally, Part I.B.3.i. of the Permit subjects sites storing sand that will be used as bedding to non-production area storm water management requirements instead of the storage requirements and best management practices required in Part I.B.1. and Part I.B.2. of the Permit.

2. 40 C.F.R. § 122.42(e)(1)(i) requires that any permit issued to a CAFO must include a requirement to implement a nutrient management plan that contains best management practices to ensure adequate storage of manure, litter, and process wastewater. The term "process wastewater" as defined in federal rules at 40 C.F.R. § 122.23(b)(7) and in Part II.A. of the Permit includes egg wash water. Part I.B.1. of the Permit establishes conditions to ensure the permittee has adequate storage. Part I.B.1.a.1. excludes egg wash water from necessary volume design requirements that establish adequate storage. During our discussion on September 17, you mentioned that EGLE regulates discharges and land application of egg wash water under an EGLE permitting authority that is not part of your authorized NPDES program. Egg wash water generated at a large CAFO is considered process water subject to the effluent limitations established in 40 C.F.R. Part 412 and nutrient management plan requirements established in 40 C.F.R. § 122.42(e)(1). Please provide more information on how discharges and land application of egg wash water will be permitted.
3. The federal effluent limitations established for CAFOs in 40 C.F.R. Part 412 provide that CAFOs cannot discharge pollutants from the production area to waters of the United States except that pollutants in a precipitation-caused overflow may be discharged if the production area is designed, constructed, operated and maintained to contain all manure, litter, process wastewaters including the runoff and the direct precipitation from a specified rainfall event. Part I.A. of the Permit provides for no discharge except for a precipitation-caused overflow from a storage structure that meets the criteria established in Part I.B.1. of the Permit.
 - a. Part I.B.1. does not appear to account for the direct precipitation from the specified rainfall event. Part I.B.1. provides that CAFO waste storage structures must be designed, constructed, maintained, and operated to contain the total combined volume of the operational volume, the emergency volume, and the freeboard volume. Part I.B.1.a.2. of the Permit provides that the emergency volume is to be kept available to contain large rainfall events, however, this condition specifies that this volume is comprised of all production area waste generated from the 25-year 24-hour rainfall event. "Production area waste" as defined in Part II.A. does not include direct precipitation from the 25-year 24-hour rainfall event.
 - b. Additionally, Part I.B.1. does not appear to account for accumulated solids that can be present at the bottom of storage structures. The operational volume established in Part I.B.1.a.1. would be the likely volume to account for accumulated solids. Concrete storage structures, if regularly cleaned, could have little to no accumulated solids but earthen-lined storage structures, even if regularly cleaned, will often have accumulated solids. Many CAFOs in Michigan make use of the Animal Waste Management (AWM) software to estimate production of manure and size of storage structures. During the September 18, 2019 presentation of the AWM software by Natural Resources Conservation Services, EPA noted that AWM assumes zero solids accumulation in its estimates of the size of storage structures.
4. 40 C.F.R. § 122.42(e)(6) provides that a permit issued to a CAFO must require that certain procedures apply when a CAFO owner or operator makes changes to the CAFO's nutrient management plan previously submitted to the state permitting authority. The procedures included in § 122.42(e)(6) impose a mandatory duty on the state to determine if the proposed revisions to a CAFO's nutrient management plan are substantial or nonsubstantial, and a mandatory duty to provide the applicable notice and review of the proposed revisions. 40 C.F.R. § 122.42(e)(6)(iii)(A)-(D) identifies specific revisions to a nutrient management plan that are considered substantial revisions requiring public notice and opportunity for a hearing prior to implementation of the revisions by the CAFO. The Permit addresses revisions to nutrient management plans in two sections, Part I.B.3.a.1. and Part I.B.4.e. Part I.B.3.a.1. is specific to the addition of new land application areas, requires public notice of the new land application areas, and provides a timeline after public notice for use of the new land application areas unless otherwise notified by EGLE. Part I.B.4.e. identifies other revisions to the nutrient management plan that the State considers "significant". These significant revisions do not appear to include the substantial revisions identified at 40 C.F.R. § 122.42(e)(6)(iii)(B)-(D), nor does the permit identify the procedures for notice and review of these significant revisions.
5. 40 C.F.R. § 412.37(a)(1)(i) requires weekly inspections of all storm water diversion devices, runoff diversion structures, and devices channeling contaminated storm water to storage and

containment structures. Part I.B.2.f.1. of the Permit requires weekly visual inspections of all clean storm water diversion devices and outlets. EPA's review did not find a permit condition that specifically requires weekly inspections of runoff diversion structures and devices channeling contaminated storm water to storage and containment structures. However, Part I.B.1.c.3. of the Permit does require weekly inspections of the collection system, lift stations, mechanical and electrical systems, transfer stations, control structures, and pump stations are properly functioning associated with CAFO waste storage structures. Please consider reviewing the CAFO Inspection Report form required in Part I.B.1.c. of the Permit to ensure this form includes inspections of all runoff diversion structures and devices channeling contaminated storm water, including any storage or containment structures that only contain process wastewater such as runoff from feed storage areas or calf hutch areas.

6. 40 C.F.R. §§ 122.42(e)(2)(i)(A) and 412.37(b) require that CAFOs maintain records to document the implementation and management of minimum elements that are required to be included in a nutrient management plan under § 122.42(e)(1). Requirements for most of the minimum elements established in § 122.42(e)(1) are found in Part I.B.2. of the Permit. EPA's review of the Permit did not find a permit condition that conformed to the documentation and recordkeeping requirements established in §§ 122.42(e)(2)(i)(A) and 412.37(b) for the best management practices required in Part I.B.2.a., c., d., and e. As discussed during our September 17, 2019 conversation, EGLE may be able to include documentation and recordkeeping on the CAFO Inspection Form required by the Permit.
7. Federal regulations establish a records retention requirement in 40 C.F.R. §§ 122.42(e)(2)(i) and 412.37(c) applicable to information and records required by §§ 122.42(e)(1)(ix), 412.4, and 412.37(c)(1)-(10). The more stringent of these recordkeeping requirements is in § 412.37(c), i.e., a CAFO must maintain records on-site for a period of five years from the date they are created. The Permit requires that records be retained for five years but the Permit does not specify five years from the date the record is created. Please consider clarifying in Part I.C.12. of the Permit that records shall be kept for five years from the date they are created.
8. The Permit requires the use of the Michigan Phosphorus Risk Assessment (MPRA) tool in lieu of the Bray P1 numerical limits to determine land application rate prohibitions and restrictions. Part I.B.3.c. provides that existing CAFOs must comply with the land application rate prohibitions and restrictions using MPRA by April 1, 2021. It is EPA's understanding that EGLE will require existing CAFOs to comply with land application rates, restrictions and prohibitions in its most current nutrient management plan until revisions can be made using MPRA but, this is not clear in the Permit. Language should be added to the Permit identifying applicable land application rate prohibitions and restrictions from the effective date of the permit to either April 1, 2021 or the date a revised nutrient management plan that includes the use of MPRA is approved by EGLE, whichever is earlier.
9. Part I.B.4.d.7. of the Permit requires submission of the Land Application Summary for Previous Crop Year form as part of the CAFO's annual report to conform to the federal requirement for an annual report found at 40 C.F.R. § 122.42(e)(4)(viii). Contents of the Land Application Summary for Previous Crop Year form are established in Part I.B.3.d.2. To ensure that the contents of this form conform to the federal requirements in § 122.42(e)(4)(viii) EGLE should confirm that Part I.B.3.d.2.b. and c. require the methodology and calculations showing the actual amounts of nitrogen and phosphorus applied to each field and the amount of any supplemental fertilizer applied to each field.

10. 40 C.F.R. § 412.37(b)(6) requires that records of the date, time and estimated volume of any overflow be retained. Part I.C.1. of the Permit includes requirements for reporting and recordkeeping of overflows. EPA did not find a requirement to retain a record of the estimate volume of any overflow in Part I.C.1. of the Permit. Please confirm that the estimate volume of any overflow is a required element on the CAFO Discharge Monitoring Report required in Part I.C.1. and consider adding "estimate of the volume of any overflow" to the list of information required in Part I.C.1.a. of the Permit.
11. 40 C.F.R. § 412.37(c)(10) requires that dates of manure application equipment inspections be retained. Part I.B.3.b.6. of the Permit requires the permittee to maintain a written record of inspections and calibrations of land application equipment but this Part of the Permit does not specify that the permittee must include the date of inspection in the records. Please confirm that the date of the inspection is a required element on the Land Application Log form required by Part I.B.3.b.6. of the Permit.
12. Part I.C.6. of the Permit establishes procedures a CAFO must follow to ensure continued authorization to discharge under the Permit beyond the Permit's expiration date if the permit expires prior to the State taking action on a CAFO's permit application. It is EPA's understanding from discussions with EGLE staff that Part I.C.6. is also intended to establish the procedures for obtaining coverage under the next general permit and that similar language in Part I.C.6. of the current general permit provides a similar process for submitting an application to obtain coverage under this Permit. It is not clear to EPA that Part I.C.6. of the Permit provides procedures for first-time applicants to seek coverage under the Permit. Please confirm that Rule 2196 of the Michigan Administrative Code, provides procedures comparable to the requirements to obtain coverage under a general permit found in 40 C.F.R. §§ 122.23(d)(1), 122.23(d)(2), and 122.28(b)(2)(i) – (iii) and including the public process required in 40 C.F.R. § 122.23(h)(1) or consider adding information about this process in the Permit.
13. The definition of "25-year, 24-hour rainfall event" or "100-year, 24-hour rainfall event" in Part II.A. of the Permit references a 1992 Huff and Angel source. EPA encourages the State to use the most current rainfall probability data available to establish magnitudes of rainfall events identified in Certificates of Coverage.
14. EPA recommends that Part II.D.7. include that the permittee provides right of entry to not only the Regional Administrator but also his or her designee.
15. EPA recommends that Part II.D.8. remove the requirement that all reports prepared in accordance with the Permit shall be available for public inspection at the offices of the Regional Administrator. EPA will follow the federal procedures for releasing records to the public found in 40 C.F.R. Part 2.
16. The Permit does not apply to duck CAFOs. Please consider adding duck CAFOs to the list of facilities that are not eligible for coverage under the Permit on the title page and remove ducks from the animal types listed in Part I.B.4.d.1.

17. Please consider revising the language in Part I.A.1.a. to make clear that the production area must be properly designed, constructed, operated and maintained as identified in Part I.B.1. of the Permit.
18. Please confirm that the use of the term "solid stackable manure" as used in Part I.B.1.d. is consistent with this term's definition as set forth in Part II.A. of the Permit.

Preliminary comments on the pre-public notice draft Fact Sheet:

19. The Public Comment section of the Fact Sheet indicates that the Department is planning to hold at least two public hearings on the Draft Permit. The Fact Sheet also indicates that the Department will entertain requests for public hearings. Please clarify whether the Department will entertain requests for public hearings in addition to the two scheduled hearings.

Preliminary comments on the pre-public notice draft Public Notice:

20. Please clarify the process by which persons without access to the internet can submit comments on the Draft Permit.
21. Similar to the Fact Sheet, the Public Notice includes the announcement of two public hearings but also provides that persons may request a hearing through MiWaters. Please clarify whether the Department will entertain requests for public hearings in addition to the two scheduled hearings.

julianne

Julianne Socha
Section 2 | Permits Branch | Water Division | Region 5 | U.S. EPA
77 W. Jackson Blvd. WP-16J | Chicago IL 60604
312-886-4436 | socha.julianne@epa.gov